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TOWARD THE DEVELOPMENT OF AN ECONOMICAL,

VALID TEST BATTERY FOR THE IDENTIFICATION OF

EMOTIONAL DISTURBANCE IN CHILDREN

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John Phillip Fiondo

A DISSERTATION

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CHAPTER I

INTRODUCTION

This study is concerned with an examination of certain aspects of the admission criteria employed in a large urban public school system for assigning children diagnosed as emotionally disturbed to special classes. An attempt has been made to generate more efficient criteria for these admissions.

The Incidence of the Problem

The number of children who face classroom difficulty for emotional reasons can be reflected in the United States Office of Education records which show that there were at least 475 separate programs for emotionally or socially disturbed children in the United States as of 1963. Ensuing federal and state expenditures for public education and special education have likely boosted this figure considerably, since that time. Hence, there exists a rather significant population of children who are unable to function adequately in the regular classroom.

In our democracy, we are committed to the proposition that each child should be educated to the limit of his ability, and our educational systems have evolved in a way as to provide a spectrum of services in order to accommodate the deviant child. In most public school systems there are specialists in speech therapy, audiology, orthopedics, as well as special instructors of the mentally retarded, perceptually handicapped, emotionally disturbed, and socially maladjusted. One will find also psychiatric, psychological and social work assistance in most of these

systems. In each instance, the primary reason for these services is to maintain the attendance of atypical children in some public school setting.

The incidence of this problem was given in a recent report by Eli Bower, in his role as consultant to the National Institute of Mental Health. He spoke of a national survey which disclosed that there were a half-million seriously disturbed children in our country and that only ten thousand of them or two percent, were receiving treatment. The vast majority of the other ninety-eight percent were in schools, attempting to function in regular classes (Bower, 1960).

Treatment facilities for children with emotional problems are scarce and often limit admission to those children who are "good cases." In addition the good case who is deemed acceptable is usually placed on a waiting list prior to activation of this case. Thus, the school has reached the point where it has been forced to assume daytime custody of children only because there is no other agency which can appropriately accommodate these children.

It has been assumed that those who are most dangerous to peers or who are disruptive in school require removal from the regular class and placement in a special class setting in order to maintain school attendance (Morse, Cutler, and Fink, 1964). Most of these disturbed children remain in the regular classroom, however. Alternatives, such as simple exclusion, institutionalization, and/or psychotherapy for so large a population, seems to be unrealistic and otherwise unacceptable. Moreover, the general consensus of mental health experts seems to be that not only should the child remain in school if at all possible, but that the school can be a beneficial agent in assisting the deviant child in his adjustment.

Bettleheim (1949) has written that the classroom environment can be reassuring for children if they are given the opportunity to act out some of their primitive pleasures in the classroom. Closely allied to Bettelheim's view is that of Pearson (1954) who believes that psychoanalytic research has contributed greatly to the schools' increased understanding of the learning process, the development of ego functions, the relation of ego to reality, the development of the super ego, as well as the school's tolerance of disturbed children in the regular classroom.

Red1 (1951) was among the first to stress the relationship between mental health and education and to show specific ways in which the learning process assisted mental health. He states that learning:

- 1. Builds and supports the child's feeling of self-worth,
- 2. Helps satisfy the need for belonging,
- 3. Builds confidence, which in turn increases the drive for further learning, and
- 4. Helps the child to set realistic goals.

Many experts in the field of mental health have become highly specific in their recommendations regarding mental health and school practices. Newman (1956) has suggested teaching methods with the emotionally disturbed child, Slavson (1954) has recommended ways of improving learning conditions and broadening interests, Axline's (1947) contributions have been in the use of nondirective approaches in both therapy and education, and Carl Rogers (1951) has produced a list of thirteen suggestions for teachers on adjusting teaching techniques, dealing especially with children visiting treatment agencies while attending school.

Much overlap exists in the thinking of mental health and educational leaders. Some investigators have delineated, nonetheless, specific educational approaches similar to those mentioned; they are: Cruickshank (1961), D'Evelyn (1956), Hymes (1949), Moustakas (1953), and Prescott (1957).

One may find also a body of thinking devoted to "adjunctive therapies" which are activities within the classroom designed to assist in diagnosis and rehabilitation of certain problems. Elinor Ulman (1961) has written of art therapy and its relation to symbolic speech. She believes that the primary function of the art therapist is to promote the process of sublimation which assists the ego in bringing about integration and synthesis and helps to fuse reality and fantasy. Other approaches which may be cited are those of Dreikurs (1955) on music therapy, Gump and Sutton-Smith (1955) on various play techniques, and Woltman (1951) on puppetry.

Hence, it may be concluded that learning takes place, not in a psychological vacuum, but in a climate of expectations, sanctions, and interrelations which have a continuous effect on self-esteem and a sense of trust. Barbara Biber refers to this phenomenon as a "reciprocal relation between cognitive-mastery-adaptive aspects and affective-expressiveintegrative aspects" of experiences. In a further consideration of this concept, Erik Erikson concludes that any curriculum should be testable against the basic trends of the period in question and against conflicts implicit during each stage. The assumption is made that schooling is able to contribute to ego strength to the extent that experiences can be enhanced by basing curriculum content and method on the knowledge of the capacity, interests, drives, and motivations of children at successive

stages of development. The work of these experts suggests the positive effects of school attendance for the emotionally disturbed child. One problem remains, however, regarding whether or not these school experiences should take place in the regular classroom. If it is concluded that attendance in special classes is required for these children -- the criteria under which such placement will be made must be ascertained.

The Diagnosis of Emotional Disturbance in School Children

An examination of the literature reveals that there are few indices of pathology available to the practicing psychologist who uses the standardized-test and clinical-interview procedure for obtaining this information. More often than not, he is faced with the task of making judgments based on conclusions drawn from data he has collected, his clinical insights, and most importantly, his wealth of experience. While there is little reason to doubt either the skills of the adequately prepared psychologist or any of his diagnoses, it is suggested here that his efficiency, and the validity of his results, would be improved to the extent that objective evidence was available to him. Accurate assessment and diagnosis is vital in the assessment process since the teacher and the psychologist do not always agree on what constitutes pathological behavior in children (Henry and Rudder, 1963; Patrick, 1965) and hence suitable criteria for admission to special classes.

It probably is not an overstatement to say that every school psychologist is constantly aware of the seriousness of a faulty diagnosis and of the tremendous burden of responsibility this places on him. A greater number of reliable indices of pathology, then, would certainly be most welcomed by practicing school psychologists. In addition, there is an important need for a quick method of determining the presence of gross

pathology in children.

The psychologist is currently committed to the administration of a formidable test battery when conducting his examination. A typical assessment may consist of an intelligence test, at least two projective tests, plus any other test the psychologist deems pertinent to the individual problem under consideration. Such a battery commonly takes at least two days to administer, score, and interpret. Therefore, if an index of pathology existed which would be both reliable and relatively quick to administer and score, it would be a tool of inestimable value. The comprehensive test battery might then be administered only to those individuals who demonstrated pathology on the index, in order to delineate further the essential nature of this pathology. It was in an attempt to generate such a quick, reliable and valid assessment battery that this current research study was conceived.

Subsequent Chapters

In Chapter II, a summary of the intellectual climate which stimulated interest in this problem has been given. Chapter III is a presentation of research and pertinent literature related to problems in the identification of the emotionally disturbed child, in terms of his selfconcept, his parental relationships, and the quality of his measurable test behavior. Chapter IV presents the pilot study which was essential in the early phases of this research, as well as general methodological aspects of the research. Hypotheses in the study, assumptions, delimitations, and research population are defined. The statistical design of the study and the nature of the test battery also are given. Chapter V presents the findings of the research and Chapter VI gives the conclusions and implications. A summary of the entire study also is

included in this final chapter.

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CHAPTER II

THE INTELLECTUAL CLIMATE OUT OF WHICH

THE RESEARCH HAS EMERGED

Early Scientific Inquiry into Childhood Deviancy

Although deviancy in adults was recognized relatively early in man's history, little has been written regarding mental illness in childhood. Prior to the 1840's, there seems to have been a general indifference toward childhood anomalies by the adult world (Kanner, 1961). The prevalent tendency was to view children's behavior on a moral level and to describe it as merely being "bad" or "good." Perhaps the earliest references regarding mental illness in children were made by Descuret, in France, in the 1840's. He concluded that a child's separation from his nurse was gradually effected until he became accustomed to her absence. This was the first attempt to perceive behavior on other than moralistic or theistic grounds. The number of such anecdotal bits of case material began to grow and, in 1867, H. Maudsley dealt with the subject in a book entitled Physiology and Pathology of the Mind. He devoted one complete section to children which was entitled "Insanity of Early Life." He theorized that the type of symptoms revealed by a child was related to the level of development. He also believed that child psychoses could be classified along these lines.

From about 1880, in Europe, there began a spontaneous movement to systematize or organize available literature and anecdotal material on the subject of childhood mental illness. The prime movers in this development

were H. Emminghaus (1887) in Germany, W. W. Ireland (1898) of Great Britain, and P. Moreau de Tours (1888) of France.

Prior to and concurrent with these initial attempts at scientific inquiry were attempts at the straightforward recording of observations of individual children. Such observations were published in 1774 by G. Pestalozzi and in 1787 by D. Tiedemann in regard to their respective sons. A century later, in 1877, Charles A. Darwin published a similar biographical study. Perhaps the main contribution of these child studies was their hypothetical implications regarding the nature of child growth and development.

In the United States, G. Stanley Hall early suggested the importance of child study (1891). He devised the questionnaire as a method of getting at children's attitudes and interests. This appears to have been the first attempt to study systematically child behavior. His primary concerns were to establish representative or normative data and to seek relationships among such things as background, behavior, and personality characteristics. Hall seemed to have established the groundwork for the aspect of psychology now referred to as growth and development.

Problem's Related to the Conceptualization

of Childhood Pathology

Just after the turn of the twentieth century, Binet published his first psychometric scale of intelligence and, at the same time, Freud began to publish work on his theory of infantile sexuality. This was followed by the establishment of juvenile courts, the incorporation of special facilities in public school buildings for the handicapped, and the realization that early treatment could be a key factor in the prevention of mental illness.

With the 1930's came a preoccupation with childhood schizophrenia which was to last throughout the entire decade, both in this country (Despert, 1938; Potter, 1938) and in Europe (DeSanctis, 1925; Homburger, 1926; Lutz, 1937; Ssucharewa, 1932; Ziehen, 1926). Emphasis was centered around "diagnosis, eitiology, therapy, prognosis," and "variations in onset, symptoms, and course" (Kanner, 1961). The trend is reflected by L. Kanner's closing remarks at a symposium, "Research on Emotionally Disturbed Children," in 1961, Penn State University. He stated:

...it is strange, indeed, that a historical review of emotional disturbances of children should occupy itself predominantly, or almost exclusively, with psychosis and, more specifically, with schizophrenia. It is equally strange that, seek as one may, it is impossible to find anywhere a definition of the term "emotionally disturbed children" which had somehow crept into the literature some thirty years ago...

While Kanner's contention that there is no definition of this term is not entirely true, there are many difficulties in formulating a good working definition of "emotional disturbance." One reason is the divergence of opinion and theoretical positions of certain experts in the field of mental health. Some investigators, such as Thomas S. Szasz (1961), would go so far as to label mental illness a myth. He contends that all mental diagnoses are judgmental and therefore subjective, and that mental deviancy is only a function of cultural norms. He advocates that modern psychiatry should address itself to new concepts revolving around the notion of "problems of living." Put another way, as man becomes increasingly aware of himself and the universe, he proportionately increases his "burden of understanding." This view is essentially the same as that held by Susanne Langer (1961) who contends that the only rational solution to problems related to mental health is more understanding

and intelligent action based on such understanding.

On the other hand, one finds in the work of Eli M. Bower a fairly specific definition of emotional disturbance (Bower and Lambert, 1961). Such a child may be defined as having "moderate to marked reduction in behavioral freedom which in turn reduces his ability to function effectively in learning or working with others." There are five patterns of symptomatic behavior, one or more of which may be adopted by the child:

- An inability to learn which cannot be adequately explained
 by intellectual, sensory, neurophysiological, or general
 health factors.
- An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
- Inappropriate or immature types of behavior or feelings under normal conditions.
- 4. A general or pervasive mood of unhappiness or depression.
- 5. A tendency to develop physical symptoms, such as speech problems, pains, or fears, associated with personal or school problems.

Not only is Bower's definition clear, simple, and workable, but it also avoids the use of psychodiagnostic language and psychiatric labels. Moreover, even an extremist such as Szasz would have difficulty challenging this definition, since its emphasis seems to lie in problems of living and avoids psychiatric diagnosis.

Bower's method of determining emotional disturbance involves the assessment of reading and arithmetic scores in association with teacher ratings. One study which attempted to utilize this procedure was conducted by Henry and Rudder (1963). Nine-hundred-fifty children in the third, fourth, and fifth grades were screened using the Bower procedures. They found that 12.1 percent of these children could be diagnosed as emotionally handicapped by using this method. The interesting sidelight is that teacher judgments concurred in just under 50 percent of the cases. The research team judged the screening procedure as both laborious and expensive, however.

The work of Bower has been highlighted at many conferences designed to study mental health and education, one of the most noteworthy of which was conducted in Rockland County, New York entitled, "Conferences on the Education of the Emotionally Disturbed Child." These conferences were conducted annually from 1959 to 1966. One major conclusion which came out of these meetings was that fully 10 percent to 25 percent of the school population present emotional disorders varying from relatively simple ones to those more acute (Lawrence, 1961).

The Forest Hill Village Project, part of the Fifth International Congress on Mental Health (Seeley, 1954) reported a multifaceted conceptualization of child mental health. Its goal was to study the way of life of a community, especially as regards its child-rearing practices, and, if possible, to examine the effect of these practices upon the mental health of its children. A child guidance clinic was established in the schools and counseling teams held special meetings and group discussions with children in the classrooms. They also developed a program of school-staff training and parent education. These investigators conceived of childhood pathology in holistic terms.

What seems to crystalize from the concern of these investigators as well as others whose work has been summarized is a growing awareness of the need for stronger school mental health programs and more

appropriate criteria for identifying the disturbed child in the school.

Problems in Identification Criteria in the

Emotionally Disturbed Child

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Perhaps the major problem concerning the identification of the emotionally handicapped child is that of screening and selecting children to be psychologically examined. Since such an evaluation is a lengthy process, it is essential that whatever preliminary screening process is utilized be efficient and, most importantly, accurate. It is noted that Eli Bower's procedure, cited above, can be both laborious and expensive. For the most part, school systems are committed to the use of teacher ratings, and general school reports in a screening process. In general, although teachers are becoming increasingly sophisticated in identifying potentially deviant children, the research seems to be somewhat conflicting in regard to accuracy scores. For example, the Henry and Rudder study of 1963 found teacher judgments of emotional disturbances in children agreed with the Bower procedures for identification in but 59 of the 121 cases.

A 1965 study reported by Patrick found that teachers' judgments concurred with findings' from the California Test of Personality in 55 percent of the cases. Teachers overlooked 27 percent of the children with tendencies toward maladjustment and in 18.5 percent of the cases, teachers' ratings were in the opposite direction to the CTP. On the other hand, there is ample research indicating that teachers may be, in general, valid raters of children's emotional statuses (Andrews and Lakewood, 1954; Fitzsimmons, 1958; Hunter, 1957; Lambert, 1959; ¹Mitchell, 1942; Neubauer and Beller, 1958).

In light of the foregoing data, it would appear that the school psychologist tends to benefit from the possession of some instrument or quickly-administered and scored test battery which he may use as a further screening procedure before undertaking to invest several hours of more depthful psychological examination and evaluation. Such a battery should consist of tasks which elicit the kinds of responses immediately pertinent to emotional instability. Isolating these variables and constructing a suitable test battery are the goals of this particular study.

Meanwhile, it has been the practice of psychologists to acquire additional insights through the use of data obtained from their subjects. Not the least of these techniques has been standardized intelligence tests combined with the clinical interview.

The Clinical Use of Tests of Intelligence

and Other Interview Techniques

With the recognition of emotional disturbance in children by officials of schools and other public agencies, an attempt was made to utilize all known tools in order to identify such children. One established and respected instrument has been the Stanford-Binet Intelligence Test.

The Binet Test

Through the use of the Binet Test, a search was made for patterns of responses and scores that might be indicative of emotional disturbance. In 1943, Myers and Gifford found schizophrenics to be superior in vocabulary, abstract words, and dissected sentences, when compared to normal individuals of the same mental age. On the other hand, they tended to do more poorly than normal subjects in picture absurdities,

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bead chains, and memory for stories. They found, however, that a number of normal individuals showed the same patterns as the typical patients.

Fiefel, in 1949, found differences in types of responses on a vocabulary test between mental patients and normal individuals; the former tended to use descriptions or illustrations, while the latter relied on synonyms. Strauss (1941) attempted to use the Stanford-Binet Test to reveal attitudes and values. He tended, however, to rely more upon the interpretation of qualitative responses rather than any quantifiable measures.

The incidence of "scatter" on intelligence has traditionally been thought of as an indicator of emotional instability. Scatter may be thought of as the amount of unevenness in subtest results. However, a review of the research by Hunt and Cofer (1944) on the significance of scatter led them to conclude that "the scatter approach appears now to be a blind alley."

Other similar types of research by Cronbach (1960) and Patterson (1953) have resulted in the same conclusions. Carter and Bowles (1948) wrote <u>A Manual on Qualitative Aspects of Psychological Testing</u>, summarizing the available literature. This review is both scanty and scattered. The Stanford-Binet is given very little consideration as a useful diagnostic tool.

Buhler (1938), Cruickshank (1947), and Young (1941) made studies of responses to individual test items to help in the diagnosis of abnormalities; and while these responses contribute in some specific diagnoses, they seem rather remotely related to projective mechanisms as such or to an understanding of personality dynamics, according to Anderson and Anderson (1959).

In summation, Cronbach (1960) suggests that the experienced psychologist may obtain valuable clinical evidence through the administration of the Stanford-Binet Test although admittedly "there is no adequate rationale for making and interpreting these observations, and the findings are necessarily tentative." Anastasi (1966) also stresses the need for "skill, experience, and psychological sophistication" on the part of the examiner, and that there are "pitfalls and limitations" inherent in this type of (clinical) observation, using Binet Test scores.

The Wechsler Scales

The Wechsler Scales for children and adults are also used in the assessment of cognition and they rank in popularity with the Stanford-Binet Test. The Wechsler Intelligence Scale for Children (WISC) is standardized to age sixteen, and the Wechsler Adult Intelligence Scale (WAIS) is standardized from age sixteen through adult. Unlike the Stanford-Binet Test, these tests are organized into subtests and divided into verbal and performance areas. Unlike the Stanford Binet, the Wechsler Scales have been widely studied and investigated as instruments for diagnosing psychopathology.

Wechsler first discussed the possibility of using his scales for diagnostic purposes in 1941, in the second edition of his <u>Wechsler</u>-<u>Bellevue Manual</u>. This material was expanded in 1958 in his book dealing with the WAIS. Substantially, his aim was to construct profile analyses through matching and comparing scores on individual subtests; his thinking was that certain combinations or patterns might be indicative of certain types of psychopathology. Other attempts at profile analyses were made by Rapaport (1945), Guertin and Rabin (1950), as well as Guertin and Frank (1956).

Shafer (1948), perhaps more than any other, has devoted much time and effort in studying Wechsler Scale patterns of psychopathology. However, those who have examined the research by Schafer and others (Guertin and Frank, 1956; McNemar, 1945; McNemar, 1957), have been in basic agreement that many of these conclusions or generalizations have been based upon data gained from small, unrepresentative samples. Ϊt should be noted also that the reliabilities of subtests are still not high enough to allow one to interpret any but the largest of differences. McNemar points out that to be significant at the .01 level, the differences between Arithmetic and Comprehension subtest scores must be at least 5 scaled points. Wechsler himself has proposed .15 level of significance as diagnostically significant. This level is equivalent to 3 scaled points. Cronbach (1960) states that the most one can look for with the Wechsler Scales are statistical trends which might distinguish groups of particular types of abnormality.

The Clinical Interview

In identifying emotional disturbance in children, the assumption is made that the psychologist or the clinician, bringing reason or clinical insight to bear upon the accumulated test data, is able to determine the existence of psychopathology more accurately than is possible through the use of relatively insensitive statistical techniques. It is not uncommon to read or hear words to the effect that "in the final analysis the administrator or the interpreter of a projective test is a more important variable that the test, itself." This notion, however, has not been supported by research. In the United States Navy a study was conducted, using trained classification experts who interviewed each recruit. These experts also had available other pertinent data, such as

life history, test results, and so forth. Their final predictions of success in a future training school were compared to a mechanical prediction formula which combined the results of two tests (Electrical Knowledge and Arithmetic Reasoning). These experts, using tests plus judgment, obtained a correlation of .41 in their selection of successful trainees, while the statistical predictions of success correlated .50 with successful trainees (Conrad and Satter, 1945).

Because this situation is of such great interest to many psychologists and statisticians, many studies have been conducted along these lines. In 1955, P. E. Meehl made an extensive search for all the work which examined the issue of clinical versus statistical predictions. He found twenty such studies and, in all but one, the statistical prediction based on quantified data only was equal or superiot to these data plus clinical judgment.

The above summary seems to indicate the current status of standardized intelligence tests and the clinical interview in the assessment of pathology in children. These methods are the best-known ways of obtaining intellectual level and patterns of cognitive growth, but they are still rather question-

CHAPTER III

THE REVIEW OF THE LITERATURE

The variables in this study relate to intellective functioning, standardized test performances, and certain attitudes expressed by children. The review of the related research and literature will be presented separately for each hypothesis in the study in an effort to highlight the significance of these variables to a study of pathology in children.

<u>Hypothesis I:</u> <u>Studies Related to the Use of Intelligence</u> Test Data as Indices to Emotional Disturbance

While psychological literature abounds with material on the use of projective tests as methods of personality evaluation, there seems to be a dearth of literature related to the use of projective tests as a method for assessing intelligence. It would appear that the primary reason for this state of affairs is the same as given in Chapter II regarding the use of standardized intelligence tests as projective tools. It was pointed out that they were not created for that purpose and, therefore, should be regarded as a secondary method of obtaining such data. Moreover, the greater part of any intelligence test is structured to the extent that the responses of subjects are objectively scorable, quantifiable, and comparable to responses obtained during sampling and standardization procedures. This means that the test data are scored in terms of cognitive rather than emotional content. Hence, personality characteristics are much less evidenced or discernible by the psychologist.

On the other hand, in a projective situation, usually far less structured, the subject reveals more personality processes in his responses and, because of the lack of structure, the subject's entire cognitive approach or style may be brought into play thereby giving the psychologist an opportunity to determine the status of his intellect and emotional balance. The Rorschach, the Draw-A-Person, and the House-Tree-Person, for example, provide definite intelligence scores while fulfilling their basic function as tests of personality. While the standardized intelligence test is the best single method of measuring intelligence, it is suggested here that the projective test is the best single way to obtain both intelligence and personality material.

In 1926, Goodenough published a scale which, in addition to tapping personality variables, was devised to measure intelligence from the drawing of a man. The scale was based mainly on the number of details included in the drawing. This seems to have been the first attempt to quantify a projective drawing in such a way as to obtain an intelligence quotient. The response and thinking generated by this new approach to intellectual assessment was to lead Machover (1949) toward the development of a more complex and refined instrument, called the Draw-A-Man test, in which the subject was required to draw a picture of both sexes and then respond to a detailed inquiry regarding the drawings. In 1952, Bender was to report a study in which 450 school children were asked to draw a man. After the drawings were rated, the incidence of psychopathology found in the drawings was compared with teacher ratings of the children. There was significant agreement between teachers and psychologists.

A year later, Hanvik (1953) concluded, from an experimental study he had conducted, that "emotionally disturbed children do not draw the

human figure in a fashion commensurate with their intelligence as measured by a standardized IQ scale." This idea was to provide impetus for Buck (1948) to investigate this aspect of psychological testing and he has provided the fields of psychology and psychometry with an extensive body of norms and standardization studies, which are to be cited later in this chapter.

Some of the more significant research, other than Buck's, which was being conducted concurrently; indicated that projective drawings revealed one's own body image (Kotkov and Goodman, 1953; Berman and Leffel, 1953; Dunnett, 1948), that these measures identified certain surgical cases (Meyer, Brown, and Levine, 1955), and certain other handicaps also could be appropriately delineated through the use of these drawings (Machover, 1949; Bender, 1952). Cleveland and Fisher (1955) found that arthritic patients projected indicative characteristics in their drawings, and Levy (1950) showed that aggressive tendencies also could be determined from these drawings. Several studies including those conducted by DeMartino (1954), Levy (1950), and Machover (1949), suggested that the presence of homosexuality could be ascertained from projective drawings and Gunzburg (1955) was able to give further evidence that general psychopathology could be seen in drawings.

Reliability studies worthy of note were obtained by Dorkin (1952), Katz (1951), Spoerl (1940), Toler and Toler (1955), as well as in the work of Waehner (1946).

John N. Buck found, in 1938, that having patients draw a "house," "tree," and "person" made even withdrawn patients more amenable to interrogation while they were engaged in the act of drawing these items (Buck, 1948). He found it useful to use these particular objects

because (1) they were familiar to most everyone, including the very young; (2) they were more willingly accepted as objects for drawing than other suggested objects, and (3) they seemed to be more conducive to discussion by the subject. He soon found that while these objects could be drawn in a large variety of ways, it was possible to gain from them useful information regarding the intelligence of his subjects. Soon thereafter, he began to gain from these data evidence of the presence of important non-intellective aspects of the total personality. This marked for him the beginning of ten years of clinical study. He began by establishing tentative norms for these data and using a restricted but carefully selected sample of 120 adults. Table 1 shows some characteristics of the standardization group.

Table 1

Intellectual Level	Sex <u>M - F</u>	Educational Achievement Level	Range Minimum	of Life <u>Mean</u>	e <u>Maximum</u>
Imbecile	5 - 15	Low 2nd Grade	13:6	20:1	29:0
Moron -	4 - 16	4th Grade	16:0	20:9	38:11
Borderline	9 - 11 [°]	8th Grade	18:7	27:1	45:0
Dull Average	11 - 9	2 years High School	18:0	25:6	39: 11
Average	11 - 9	3 years High School	18:11	25:6	48:4
Above Average	11 - 9	3 years College	1 7: 7	21:1	31:11
Superior	19 - 1	6 years College	. 20:0	22:6	26:0

Normative Group, A House-Tree-Person Study*

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*Cited in Buck scoring manual.

It may be seen that 140 (70 male, 70 female) subjects constituted the sample in this study, which represented every intellectual level from "imbecile" to "superior," in terms of classifications used in that era.

Educational achievement ranged from "low second grade" to six years of college. The ages of these subjects ranged from 13.6 years to 48.4 years, and the mean ages from each group ranged from 20.1 years to 27.1 years.

The obtained drawings were carefully scrutinized and analyzed in an attempt to isolate and identify "as many as possible of the items which might by their presence or absence serve to differentiate subjects on the basis of intelligence." It was found that items of detail, proportion, and perspective served best to differentiate among subjects of various levels. Next it was decided that the investigators should attempt to identify and evaluate those items which might be indicative of psychopathology. The study was conducted at the University of Virginia Hospital. Table 2 shows the number and type of subjects included in the preliminary study.

The breakdown of the number of subjects (N) reveals that about onethird of the group comprised patients diagnosed as "psychoneurotic." Two groups of about one-fifth each were made up of those cases identified as "psychotic" and those labeled "epilepsy with personality maladjustment." Approximately one-seventh of the sample were adjudged to be "psychopathic" and the remaining group of subjects comprised categories called "adult maladjustment," "pre-psychotic" and "mental deficiency with problems."

Tab	le	2
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Areas of Pathology Represented in the Buck	<u>Study</u> *
•	N
Adult maladjustment	10
Epilepsy with personality maladjustment	29
Psychopathic personality	22
Psychoneurosis	53
Pre-psychotic state	3
Mental deficiency with psychosis	6
Psychosis:	
(a) organic	1 1
(b) functional	16
Total ,	150

*Cited in Buck scoring manual.

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While the original population was admittedly not a well-balanced one, the drawings of more than 500 subjects exhibiting definite personality maladjustment, were analyzed in order to refine and to confirm or occasionally reject factors discovered in the original study and to add to the reliability of these factors.

Subsequent studies have compared the House-Tree-Person intelligence quotients with those of the Otis, the Stanford-Binet, and the Wechsler Scales. Table 3 shows the Pearson coefficients of correlation which were obtained in later studies.

Table 3

<u>Pearson's Coefficients of Correlation between the H-T-P Test</u> <u>Data and Other Indices to Intelligence</u>*

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Group

A	Otis, Higher	30	.41	<u>+</u> .1024
В	Stanford-Binet, Forms L & M	26	.45	<u>+</u> .1054
С	Wechsler-Bellevue, Verbal	100	.699	+ .034
C	Wechsler-Bellevue, Performance	100	724	+ .032
С	Wechsler-Bellevue, Full	100	.746	<u>+</u> .029
*Cite	ed in Buck scoring manual.			

By far the most impressive correlations were obtained between the H-T-P IQ's and the Wechsler IQ's. The H-T-P IQ was found to have a correlation of .746 (with a probable error of no more than three points) with the Wechsler Full Scale IQ. Correlations of .669 with the Wechsler Verbal Scale and .724 with the Performance Scale must also be regarded as quite high.

The correlations obtained by comparing the H-T-P with the Otis and Binet were .41 and .45 respectively, (with a probable error of about 10 points in each instance). These correlations are not nearly so impressive as those previously mentioned, but may have been regarded as "fair" at the time of the study, when such comparisons were still relatively rare. Sample size for these two tests could be a variable in this case and may, in large part, account for the rather large probable error obtained.

Table 4 shows comparisons of measures of central tendency in these studies. It may be seen from this table that this investigator did not obtain great variability between standardized test IQ means and the H-T-P "raw g" IQ means, one indication that such an instrument would be effective in assessing group levels. These data revealing central tendency and range indicate how closely the H-T-P and the Wechsler Scales agree. Between H-T-P and the Full Scale IQs, there is a difference of three mean IQ points, eight IQ points at the upper, limits, and virtually no difference in standard deviations. The H-T-P and Wechsler Performance IQs differ by two mean IQ points, one and five IQ points at the lower and upper limits, respectively, and half a unit in standard deviation.

As was the case with correlations cited in Table 3, the Otis and the Binet do not so completely agree with the H-T-P as is true for the Wechsler Scales, but neither are the findings so spurious that they should be disregarded.

Table 4

Comparison of Measures of Central Tendency and

Variability for IQ Data*

Group	Tests	No. Cases	Mean	Range	S. D.
A	Otis, Higher IQ	30	121	98 - 144	11.07
	H-T-P percent of "raw g" IQ	•	114	83-140	12,48
В	Stanford-Binet, Forms L & M IQ	26	47	27-65	9.71
	H-T-P percent of "raw g" IQ		[`] 53	33-81	13.39
C	Wechsler-Bellevue, Verbal IQ	100	74	44-132	20.60
	H-T-P percent of "raw g" IQ		73	35-133	23.10
С	Wechsler-Bellevue, Performance I	Q 100	6 9	34-120	21.95
	H-T-P percent of "raw g" IQ		71	35-115	21.32
С	Wechsler-Bellevue, Full IQ	100	70	35-125	23.29
	H-T-P percent of "raw g" IQ			35-133	23.36
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*Cited in Buck scoring manual.
Buck concluded that the comparison of the H-T-P IQ with the IQs obtained by the same subjects on other tests designed specifically to measure intelligence, appeared to offer evidence that the H-T-P satisfactorily appraises general intelligence. He states in later unpublished studies that the best correlations are obtained only when: "(1) the subjects are relatively free of personality flaws: or (2) the subjects are so deteriorated and/or maladjusted that all test scores are depressed thereby." Buck speaks of the IQ obtained in the standardized intelligence scale as indicative of the subject's true intelligence or abilities. This may be referred to as "potential intelligence." On the other hand, the H-T-P IQ appears to indicate the level at which the subject is functioning. If no personality flaws are present, there will be significant agreement between these scores. In cases where psychopathology does exist, there is a noticeable decline in IQ points for the H-T-P IQ. Behaviorally, it is known that the capacity to act intelligently is directly related to the adjustment of the individual. The H-T-P IQ, which seems to be sensitive to the existence of personality defect, may be termed the "functional intelligence" of the individual, and could be thought of as his current level of intellective behavior.

Hypothesis II: Studies Related to Self-Concept, Sex

Identification, and Familial Relations

It will be noted that, in this research, the principle data gathering device for the self-concept, sex identification, and for familial attitudes has been the Buck Post-Drawing Inquiry. In the review of the literature, attempts have been made, not only to explore studies related to the stated hypothesis in a general sense, in terms of administrative policies and diagnostic strategies for emotionally disturbed

children in schools, but also to try to determine the degree to which these research studies made use of the assessment techniques selected for use in the current study. It became obvious during the early exploratory period regarding the nature of the literature that a paucity of studies existed in which the Buck PDI had, in fact been employed. Indeed, this investigator was not able to uncover a single study. In an examination of Buck's thinking regarding the appropriateness of these measures for delineating these aspects of personality, the investigator considered his reasoning sufficiently compelling to serve as a basis for one aspect of this research.

Self-Concept

Although there is little research in this specific area, as it relates to the hypothesis in this study, it is noted that a recent survey of the literature, (Wylie, 1961) produced overwhelming evidence that selfacceptance was related to adjustment and that a high regard for self generally meant a high level of adjustment. In earlier work, Wylie (1957) found that individuals who were self-accepting tended to be more accepting of others. Maris (1958) went on to find that the most accepting people were those who were highly regarded by their parents and who were aware of this parental regard. Relationships between good self-concept--good adjustment, and poor self-concept--poor adjustment has also been explored by investigators such as Baldwin (1945, 1955), Levy (1943), Sears, Maccoby, and Levin (1957), and on a psychotherapeutic level, by Rogers (1951), and Shlien (1962). From these findings, it may be contended then, that the self-concept of the emotionally disturbed child is different in a significant way from that of the child who is not recommended for special class placement. Phillips (1964) states that results of several (apparently

unpublished) studies give evidence "which confirms much of the early theorizing [about the self-concept]" and that lend additional insights to the course of development of the self-concept during infancy and childhood. He believes that the relationship between self-concept and self-acceptance has been firmly established. He concludes that selfconcept is a factor in every learning situation.

That Phillips' conclusion is, at least in part, valid, may be demonstrated by research conducted by Wattenberg and Clifford (1964) in which the relationship between self-concept and reading disability was studied. It was found that measures of self-concept taken in kindergarten proved significantly predictive of progress in reading. Also noted in the study were two aspects of self-concept: feelings of personal worth and feelings of competence. These findings support the notion that there is some relationship between self-concept and school adjustment.

As previously indicated, the H-T-P test devised by Buck has a standard Post-Drawing Inquiry consisting of 64 items, six of which were not quantifiable and were, therefore, deleted from the study during the initial phases of the research. The 58 remaining variables did, in fact, serve as stimulus material during the data-gathering aspect of the study, but were further refined in keeping with the objectives of the research. A fuller explanation of the rationale for this process is given in a later chapter.

Sex Identification

Interwoven with self-concept, mental health, and school performance, is the variable of the sex identification of the child. Kronenberger and Heck (1964) attempted to investigate reading problems as they relate to sex identification. Using the <u>Elias Family Opinion Survey</u>, they compared

attitude scores toward mother and father for 233 adolescents who were divided into low, medium, and high reading groups. Significant results for girls were found. In the low-reading groups, girls showed significantly poorer identification with fathers than with mothers. Girls who read poorly when compared to those who read well, had significantly poorer identifications with both father and mother. These investigators therefore concluded that "the psychoanalytic interpretation of reading problems as reflective of faulty identification with the like parent is upheld for girls, but not for boys."

Siegmann (1966) hypothesized that difficulties in achieving adequate sex role identification is a significant source of male antisocial behavior. This led Siegmann to the hypothesis that father absence during early childhood will be related to antisocial acting-out. This hypothesis was tested by comparing 51 "father-absent" male medical students to 89 comparable "father-present" students on an anonymously administered antisocial behavior scale. He found supportive data for his hypothesis.

In a study attempting to link both sex identification and antisocial behavior in boys to paternal absence, McCord, McCord, and Thurber (1962) found that absence of the father was related significantly to feminine identification (though not in terms of overt homosexuality). He also found antisocial behavior relates to aggressivity, and that anxiety relates to sex as well as oral tendencies in the subjects of this study. <u>Familial Relations</u>

Patterns of parenthood and child-parent interactions are fundamental to the eventual development of the child. This notion has become axiomatic in almost every system of psychological thought and it permeates the philosophy of most of our institutions which are devoted to mental health.

As might be expected, there is a wealth of research available in this area. Certain investigators have concentrated on examining the family constellation of children known to be disturbed, delinquent, and abused. Wolff (1961) for example, studied the social and familial background of pre-school children with behavior disorders who were attending a child guidance clinic. Comparing the backgrounds of these children with those of a national, matched sample, he found a high incidence of psychiatric disturbance in the parents of the experimental group. In addition he found that these parents had experienced much deprivation in their own lives as children.

In a study of the backgrounds of normal, delinquent, and emotionally disturbed children, Martin and Chanwell (1964) found, using the <u>Minnesota</u> <u>Multiphasic Personality Inventory</u>, significant differences between the parents of delinquents and the parents of normal children, but they found no significant differences between the parents of delinquents and parents of emotionally disturbed children. A more comprehensive study by Badami (1965) found that delinquents tend to have more doubts concerning their legitimacy, (a significant proportion were, indeed, illegitimate), they also are more rejecting and indifferent toward their parents, more poorly educated and more of them are addicted to drugs. There was more illiteracy and poor health among their parents, as well. Finally, delinquent children tended to come from broken homes or they tended to reside with adults other than their parents.

An imaginative study by Carek, Hendrickson, and Holmes (1961) attempted to show that the delinquent behavior of adolescents meets a need in their parents who, in various ways encourage and support the antisocial actions of their children. They noted that improvements in these

children created anxiety in the parents and that their disapproval of the delinquent acts showed much ambivalence. Finally, Nurse (1964) studied 20 cases of parental abuse of children brought before Manhattan Courts. She found that the abusive parent was usually emotionally disturbed and/or alcoholic and delinquent.

Broken homes have been given as a main cause of delinquency and psychopathology on the part of children. Both Pati (1961) and Badami (1962) have found this to be the telling variable, though Badami also points to illegitimacy as a very important factor. While the broken home in general is admittedly a serious handicap for many growing children, some investigators have found that the lack of a specific parent, the father, may lead to emotional disorders. Fletcher and Schroeder (1960) studied hospitalized, mentally ill children and found that, while 55 percent of the children had one or both parents missing, agency contacts "were significantly numerous where family life had been disrupted through the death, hospitalization, or imprisonment of the father." Tamkin (1964) found pathogenic parental attitudes affected adversely the child's adjustment and that the father's attitudes were more pervasive than those of the mother.

This issue was also studied on an international level by Mussen, Young, Caddini, and Morante (1963). Using groups of adolescent boys in Rome, Palermo, Florence, and Boston, they found, regardless of locale, boys who received insufficient paternal affection tended to feel rejected and unhappy. As if to summarize the work of his American colleagues, Hans Hartelius (1965), in a Scandinavian study of 145 male juvenile delinquents and a matched set of non-delinquents, found that the delinquent population had a higher rate of illegitimacy, 43 percent had

lacked care from one or both parents for a period representing more than half their lives and existing up to age fifteen, 37 percent of the fathers drank to excess, 20 percent of these delinquents experienced parental brutality, 14 percent were neglected, and in 70 percent of the cases, at least one parent had a record of delinquent behavior.

The relationship between unstable homes and academic achievement also has come under scrutiny. Chazan (1965) compared 30 "best adjusted" children with 30 "most maladjusted" children. He found significantly more of the maladjusted children were subjected to adverse psychological pressures and unsatisfactory discipline at home. Significantly a smaller number of these children had established a positive relationship with their fathers. He found aggressive behavior to be often linked with insecurity at home and with hostile parental attitudes.

Crescimbeni (1964) in an equally careful study using groups matched for age, IQ, sex, grade, school, teacher, and socio-economic level, found that broken homes were a key variable in maladjustment. Ninety-two pupils from united homes were observed to be achieving nine-tenths of a year beyond children from broken homes. Irrespective of reason for separation: separation, divorce, or death, achievement was significantly lower, for these children, than for those who came from intact homes.

A study by Pavenstedt (1965) found familial stability to be more important than socio-economic class in reference to determining the potential achievement of the child. Lower class children from stable homes adjusted well and succeeded academically in the first grade. In contrast, poor adjustment and learning disability was significantly linked with "multi-problem families."

The research on childhood deviancy could easily be summarized through a study of the extensive cross-sectional, multigroup comparison of environmental and personality factors which have been associated with deviant behavior. Between and within group correlations have been drawn for delinquency-non-delinquency, white-Negro, high socio-economic-lowsocio-economic, broken home-unbroken home, high achievement-low achievement, as well as teacher rated adjusted-teacher rated maladjusted individuals. Significant correlations have been noted between personality maladjustment and delinquency, as well as between deviant personalities and broken homes. Non-delinquent children from broken homes show a significant incidence of depressive reactions (Ball, 1962).

Hypothesis III: Studies Related to Children's

Attitudes Toward Parents .

While research concerning the attitudes of children toward their parents is sparse, there is some evidence that children view their parents on the basis of their own perceptions. Inge, Serot and Teevan (1961) conclude that a child's adjustment is related to his perception of his relationship to his family, however, that the child's perception of the relationship seems unrelated to his parents' perception of that relationship and this perception may or may not be related to the child's adjustment. This research involved 102 children between the ages of nine and ten years.

Apparently, self-acceptance is the fundamental variable when it comes to accepting or not accepting others. Medinnus has examined this issue from both directions, parent-child and child-parent. Working with Curtis (1963), Medinnus administered measures of self-acceptance and child-acceptance to 56 mothers enrolled in a parent-participating

cooperative nursery school. They found a significant positive correlation between maternal self-acceptance and child acceptance.

In examining acceptance in the opposite direction, Medinnus (1965) found that adolescents who were high in self-acceptance and adjustment perceived their parents as loving and not very neglectful and rejecting. Similarly, in comparing the relationships between normal and disturbed sons' perceptions of their parents' behavior, Vogel and Lauterbach (1963) found problem sons had more idealized views of their mother's behavior and more hostile perceptions of their fathers' behavior, than did the controls in the sample.

The delinquent's view of his parents was studied by Medinnus (1965), using the <u>Parent-Child Relations Questionnaire</u> on 30 delinquents, and a matched group of 30 non-delinquents. His first hypothesis of a significant difference between delinquent and non-delinquent boys in terms of their perceptions of their parents, was clearly confirmed. The non-delinquent boys held more favorable attitudes toward their parents. The second hypothesis was that there existed a greater difference between the two groups in their perceptions of their fathers than was true in reference to their mothers. This was also confirmed. The unfavorable attitude of the delinquents toward their fathers was especially marked on the "Rejective" and "Neglecting" scales.

Since one of the aims of this dissertation is to determine whether or not clear differences in perception exist between disturbed children and non-disturbed children in regard to their parents, the above research has been cited. It could be argued further on a theoretical level that perceived faulty parent-child relationships is a crucial variable in the development of disturbed or delinquent patterns of behavior.

Hirschstein and Rabin (1955) studied responses of 40 juvenile delinquents. They were divided into two groups and matched for age and IQ, but one group was raised in foster homes or orphanages, and the other group lived with their families until their arrests. The hypothesis was that the first group would have greater difficulty in responding to Cards IV and VII of the Rorschach (the "father" and "mother" cards) because of confusion regarding parental images. The results indicated that "the youngsters who grew up with their natural families reacted significantly more slowly to Cards IV and VII than did the group who had no real mother or father figure with whom to identify." The authors offer this as evidence that these cards are "symbolical parental figures."

Other confirming studies have been done by Levy (1958) suggesting Card VII as the "mother" card. Phillips and Smith (1953) quote unpublished material from Klopfer acknowledging the parental significance of these two cards, and Klopfer, himself, the author of significant interpretive texts in the field of Rorschach analysis discusses positively the symbolic aspects of Cards IV and VII and their relationships to perceived parental figures (Klopfer, Ainsworth, Klopfer, and Holt, 1954). Further statistical evidence and development of rationale is provided by Nelder in his essay, "Relationship Between Rorschach Parental Responses and the Attitudes of Union Members" (1963). These studies are of particular interest in view of the assessment techniques used in the current study.

Hypothesis IV: Studies Related to the Bender Gestalt

Test as a Measure of Perceptual Development

The organismic approach to psychology implies the importance of the entire organism as it relates to its environment, as it attempts to adapt, adjust, and in short, to deal with internal and external demands. Of equal

importance is the apparent relationship between personality variables and variables which index ability levels. Merriman (1960), for example, has searched for relationships between motor ability and personality. He administered the <u>California Psychological Inventory</u> and the <u>Phillips</u> <u>Jurgensen Classification Inventory Test</u> (a self-report personality inventory) to 808 boys. The boys with higher motor ability scored higher on ascendency, self-assurance, intellect, and interest, than boys with lower motor ability. Merriman concluded that motor ability is related to other personality traits.

Keogh (1965) found that children who achieved well on the Bender Gestalt Test were apt to achieve well in other aspects of the school program. She feels that the Bender should be considered as a possible screening technique for early identification of children likely to be successful in the school program.

Since 1938 when the original Bender article appeared, some 130 books and journal articles have been published on the use of this tool, 29 of which are concerned entirely with children. Most of these writings are of recent origin. A breakdown reveals that five of these studies have been conducted in order to determine school readiness (Baldwin, 1950; Harriman and Harriman, 1950; Koppitz, Mardis and Stephens, 1961; Smith and Keogh, 1962; Thweat, 1963); two other studies have attempted to predict school achievement (Koppitz, 1962; Koppitz, Sullivan, Beyth, and Shelton, 1959); two studies have focused upon reading and learning problems (Koppitz, 1958; Lochman, 1960); five studies relate to the evaluation of emotional difficulties (Clawson, 1959; Clawson, 1962; Koppitz, 1960; Koppitz, 1960; Simpson, 1958); one study attempts to determine the need for psychotherapy on the part of the subjects

(Byrd, 1956); seven studies are related to the diagnosis of brain injury (Chorost, Spivaek, and Levine, 1959; Halpin, 1955; Hanvik, 1953; Koppitz, 1962; Shaw and Cruickshank, 1956; Wewetzer, 1956; Wewetzer, 1959); and three studies treat mental retardation (Eber, 1958; Halpin, 1955; Keller, 1955).

It is readily seen therefore, that the popularity of the Bender Gestalt Test has been steadily increasing and moreover, it should be pointed out that the regard for the Koppitz scoring system, which will be used in this study, has also grown.

CHAPTER IV

METHODOLOGICAL CONSIDERATIONS IN THE RESEARCH

In the fall of 1965, the Detroit Public Schools initiated a special program for children diagnosed as emotionally disturbed. These children had been recommended initially by classroom teachers to the Detroit Psychological Clinic for evaluation and possible placement in special classes. The referrals sent by the schools were screened by a group consisting of social workers, consulting psychologists and a psychiatrist. All children suspected of organic dysfunction were eliminated at this point. These pupils were examined by staff psychologists at the Detroit Psychological Clinic in association with consulting psychiatrists who reviewed each case before final recommendations were made. Final judgment regarding placement was assumed by the clinic director, a consulting psychologist. In view of the fact that the school system established nine classes for children diagnosed as emotionally disturbed, it was concluded that an appropriate study might be made of the children who were recommended for special classes, comparing them with those who were returned to their regular classes.

The ensuing study has consisted of two phases. The initial phase constituted an examination of the variables utilized in the screening process by the clinic to determine whether or not a statistically significant cluster of variables could be ascertained which would differentiate between the two groups of children. The second phase of the research has been an attempt to establish an efficient, valid, and reliable test

battery which might constitute an economical index for future screening procedures. It was decided that the first phase of this research would be viewed as a pilot aspect with the second phase constituting the more substantial part of the research. In point of fact, however, each phase seems sufficiently compelling in its own right to warrant major consideration as a part of this dissertation. It is within this framework that the current chapter has been organized.

The Pilot Study--Phase I of the Research

Described below are the steps followed in which an examination was made of the screening process employed by the clinic to assign children to special classes:

- Only cases with a certain, predetermined minimum amount of data were used.
- The entire group of children was divided on the basis of those certified and those not certified for special classes.
- 3. A further separation was made within the non-certified group, isolating only those who were judged not to be disturbed.
- 4. The resulting test data were treated through an analysis of variance with the appropriate "t" test of significance. See Appendix A.

It was assumed that through this treatment of data, it might be determined which aspects of the test battery and other clinical data differentiated between the groups in the most significant way.

The following information was provided the investigator by the Detroit Psychological Clinic:

1. Name

2. Address

3. Sex

4. DLA Test Results

5. WISC Test Results

6. Bender Gestalt Test Results

7. Number of Parents in the Home

8. Parental Occupation(s)

9. Parental Stability

10. Number of Siblings

11. Ordinal Position

12. Term of Pregnancy

13. Serious Illnesses or Accidents

14. Clinical History of Family

A data sheet for each child was constructed (Appendix A), and the only cases used were those with all of the above information. Examination of the entire population of cases available resulted in the accumulation of 39 complete cases in which the child was diagnosed as emotionally disturbed and recommended for placement in special classes. Of the non-certified group, a total of 15 cases was found consisting of children who had little or no diagnosable psychopathology. These children were returned to their regular classes. A second group of non-certified children was recommended for more intensive types of therapeutic assistance and/or excluded from school and, therefore, was not considered in the pilot study. A third group of non-certified children was diagnosed as "socially maladjusted" and placed in special education classes designed for this type of child. DLA and WISC results for this final group of children were included in the pilot study.

Population

The children who constituted the sample in the pilot study ranged between nine years and twelve years of age and attended the Detroit Public Schools in 1965. Each child was referred for evaluation and possible special class placement by his classroom teacher with the approval of the school principal. The 39 certified children had a mean age of 10.3 years, while the 15 non-certified children had a mean age of 10.4 years. Boys made up 82.1 percent of the certified group and 73.3 percent of the non-certified group. Hence, of the 54 cases examined, 43, or 79.6 percent, of the subjects were male.

Hypothesis

In the pilot phase of the study, an effort was made to determine valid indices of psychopathology on the basis of the quantifiable data accumulated for each child. As a result of an examination of the data, one basic hypothesis seemed fruitful as a way of bringing additional clarity to these data. The hypothesis is:

There are significant differences between children diagnosed as emotionally disturbed and children who are returned to their regular classes; i.e., among the following variables:

1. Sex

- 2. DLA Test Results
- 3. WISC Test Results
- 4. Bender Gestalt Test Results
- 5. Number of Parents in the Home
- 6. Parental Occupation(s)
- 7. Parental Stability
- 8. Number of Siblings

- 9. Ordinal Position
- 10. Term of Pregnancy
- 11. Serious Illnesses or Accidents
- 12. Clinical History of Family

Pertinent Terms

Important terms in this study are:

- DLA. The <u>Detroit Tests of Learning Aptitude</u> provides mental ages for each of nine subtests purporting to measure intelligence. It also yields an overall intelligence quotient.
- 2. WISC. The <u>Wechsler Intelligence Scale for Children</u> provides mental ages for each of ten subtests purporting to measure intelligence. In addition to yielding an overall intelligence quotient, it provides a verbal and a performance intelligence quotient.
- 3. <u>Bender Gestalt Test</u> is a pencil-and-paper test designed to reveal visual-motor development.
- 4. <u>Parental Stability</u> is defined as the absence of certain overt behaviors or history of psychopathology. Instability is scored on the basis of: alcoholism, desertion, drug dependency, and history of mental institutionalization on the part of either or both parents. These data were secured at the time of the parental interview conducted for each case. Instability was scored only in those cases where a parent actually reported the existence of one of the four conditions, rather than in terms of inference made by the investigator.

- 5. <u>Serious Illnesses or Accidents</u> are defined as any illness which required hospitalization on the part of the child.
- 6. <u>Clinical History of the Family</u> refers to the Detroit Psychological Clinic's "family file" in which records of each case are kept. This allows an investigator to determine whether any other member of the subject's family has been seen by the clinic during his school career.

Assumptions and Delimitations

In order to conduct the pilot phase of the study, it appeared that certain assumptions were necessary. These are listed below:

- The subjects in each of the two groups of this study are representative of their respective populations.
- Variables exist within the individual which may lead to a diagnosis of psychopathology.
- 3. The variables chosen in this study may be some of the ones which are significant as indices of pathology.
- The instruments chosen to measure these variables are
 valid and reliable.

It is known that additional variables may have influenced the classroom behavior of certain individuals, the methods of selection by certain teachers, and therefore influenced the structure of the population itself; but these variables, of necessity, have been omitted.

Presentation of Findings

While this is basically a study of differences between two groups of children, data were available for a third group, as mentioned carlier in this chapter, and results for this group are presented under the heading of "socially maladjusted." The final number of subjects totaled 35 in

the certified group, 13 in the non-certified group, and 13 in the socially maladjusted group. At the time the data were collected, this number constituted the total population of children who were screened and for whom complete data were available.

Findings Related to Intelligence Test Data

The WISC subtest and IQ mean scores of the three groups, the certified, the non-certified and the socially maladjusted, were compared by F-tests. See Table 5 for the means and standard deviations of each group and the F-value of the tests. All tests were conducted at the .05 level of significance.

The subtest score on Block Design was the only variable with a significant F-value. The group means were submitted to t-tests to determine which means differed significantly. No significant differences were obtained between comparisons of the certified group with the non-certified group (t = 1.01) or between the non-certified and the "socially maladjusted" groups (t = 1.38). The only significant "t" was noted in the comparison of the certified group with the "socially maladjusted" group (t - 2.67; p < .01). On this particular subtest (Block Design), the certified group attained a mean scaled score of 9.6, which is very near the average scaled score of 10. On the other hand, the "socially maladjusted" group earned a group mean scaled score of 6.8. This subtest consists of the manipulation of multicolored blocks in order to construct a design, the picture of which is presented to the subject. It means that the subject must perceive the design, do some planning of block placement, construct the design, and check his results. Since most of the children placed in classes for the socially maladjusted are impulsive, aggressive, acting-out children, one suspects that their relatively low score could

be explained on the basis that they are not given to making plans or indulging in feedback for the purpose of self-correction. It is possible that their behavioral style involves immediate reactions to stimuli due to lack of inner controls.

The factors associated with low achievement on the Block Design subtest of the WISC take on added significance when it is noted that these are similar variables to those so frequently given as a primary reason why teachers refer children for psychological evaluation.

It is interesting to note that the non-certified group had a score in Block Design which fell between both other groups, and closer observation shows this to be a pattern. On seven of the ten subtests and the three IQs, the non-certified group scored lower than the socially maladjusted group.

Table 5

Means, Standard Deviations and F-Values on WISC Scores

for the Certified, Non-Certified,

and Socially Maladjusted Groups

	N=35		N=13		N=13		
	Certi	fied	Non-Ce	rtified	Socially M	laladjusted	
Variable	<u>Mean</u>	<u>s.</u> D,	<u>Mean</u>	<u>S</u> . <u>D</u> .	Mean	<u>S.D</u> .	F
WISC-Information	8.8	2.2	7.6	3.3	7.5	2.3	1.85
WISC-Comprehension	9.1	2.8	9.8	4.1	7.8	3.1	1.17
WISC-Arithmetic	8.7	2.8	7.9	2.7	6.8	2,4	2.34
WISC-Similarities	9.5	2.4	8.7	3.9	7.4	3.2	2.47
WISC-Vocabulary	8.7	2.5	7.3	3.1	7.4	2.6	1.72
WISC-Picture Completion	9.7	2.8	9.1	3.8	7.6	2.1	2.26
WISC-Picture Arrangement	9.1	2,5	8.2	2.3	7.6	2.1	1.98
WISC-Block Design	9.6	3.3	8.5	3.2	6.8	2.0	3.59*
WISC-Object Assembly	9.6	2.5	9.3	3.0	8.8	1.9	0.50
WISC-Coding	7.7	2.4	8.5	2.4	8.1	2.0	0.63
WISC-Verbal IQ	92.9	11.0	88.7	17.6	86.3	11.3	1.49
WISC-Performance IQ	93.1	12.4	92.6	15.1	86.7	11.1	1.29
WISC-Full Scale IQ	92.3	11.3	89.7	16.0	84.9	11.5	1.73

*Significant at .05 Level

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The three groups were also compared for mean differences on the DLA subtest and overall IQ scores. Table 6 gives the means and standard deviations of the DLA subtest scores in mental age months, the overall DLA IQ scores and the chronological month age means for each group.

The DLA Full Scale IQ scores were compared for the three groups by means of an F-test. The F-value (F = 1.17, df = 2.65) was not significant.

All subtest scores were recorded in mental age months and, hence, were subjected to a slightly different test in order to evaluate mean scores for differences among the three groups. This was necessary due to the fact that the three groups differed somewhat with respect to mean chronological age. Multiple t-tests, using an error term based on the weighted average variance of the three groups (similar to the error term in an F-test), was the method of analysis on the DLA subtest scores. For each comparison the null hypothesis was suitably altered in order to adjust for the discrepancies between the group chronological ages. In this manner the null hypothesis for the comparison of the certified (Group 1) with the non-certified (Group 2) was H_0 : $(\mu, \pm 1.0) - 2 = 0$. When the certified group (Group 1) was compared with the "socially maladjusted" group (Group 3), the null hypothesis was H_0 : μ , - ($_3 \pm 9.0$) = 0. And when the non-certified group (Group 2) was compared with the "socially maladjusted" group (Group 3), the null hypothesis was H_0 : (μ_2 - ($\mu_3 \pm 10.0$) = 0. Each t-test had 65 degrees of freedom. All tests were conducted at the .05 level of significance.

Regarding Table 6, it is noted that the mean subtest scores on the DLA ranged from 123.6 in "Free Association" to 94.9 in "Disarranged Pictures" for the certified group. In the case of the non-certified group, the range of scores on the subtests was not as great; the highest

Table 6

DLA Test, Means and Standard Deviations for the Certified,

Non-Certified, and Socially Maladjusted Groups,

Chronological Mean Group Age in Months

	N=39		N=1	N=15		N=14		
	Cert	ified	Non-Cer	tified	Soc	ially	Maladjusted	
Variable	Mean	<u>s.D</u> .	<u>Mean</u>	<u>s.p</u> .		Mean	<u>S.D</u> .	
DLA-Vocabulary	110,5	24.3	109.0	26.6		99.9	17.6	
DLA-Motor Speed	107.9	18.2	102.1	22,2		94.9	17.6	
DLA-Free Association	123.6	32.2	104.6	23,9		97.4	26.1	
DLA-Designs	107.8	22.0	108.9	27.3	•	93.4	18.4	
DLA-Auditory Attention Span	109.6	28.4	108.0	23.4		105.6	28.8	
DLA-Social Adjustment	108.5	20.1	106.4	14.7		94.5	11.0	
DLA-Visual Attention Span	111.5	22.8	113.3	12.8		106.1	34.4	
DLA-Disarranged Pictures	94.9	26,2	102.4	45.9		73.9	9.8	
DLA-Oral Directions	117.7	26.4	105.8	15.7		95.1	27.1	
DLA-Full Scale IQ	88.9	10.8	85.7	11,4		83.6	14.4	
Chronological Age in Months	12	-	1:	25		1	.15	

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mean subtest score was 113.3 on "Visual Attention Span" and the lowest mean subtest score was 102.1 on "Motor Speed." It is noted moreover, that the socially maladjusted group gave evidence of the largest range of mean subtest scores for the three groups. These scores ranged from 73.9 on "Disarranged Pictures" to 106.1 on "Visual Attention Span."

It is not entirely evident as to the meaning of these data, but it is interesting that the socially maladjusted group had its lowest scores in the same area (Disarranged Pictures) as the certified group and its highest scores in the same area as the non-certified group; that is, in "Visual Attention Span."

The data presented in Table 6 were computed statistically by means of the t-test. Table 7 gives the t-values for those data.

It is readily seen that the only t-value on Table 7 to emerge as significant is the one for the "Free Association" subtest of the DLA when comparing the certified group with the non-certified group. Moreover, it was the certified group who scored higher. These subjects earned a mental age of 123.6 months as against a mental age of 104.6 months for the noncertified group.

The Free Association subtest requires the subject to call words that come to his mind as fast as he thinks of them. The number is totaled for purposes of calculating a mental age. It may be that the nature of their pathology, if it is true that they are in fact disturbed, does not militate against achievement in this area. The fact that their egos may be weakened may allow them more ready access to their fantasy life and hence greater ability to engage in free association.

It occurs, again, that in most subtests (6 of 9) and in total IQ, the non-certified group attained mean scores which fell between the

Table 7

Comparison Among Certified, Non-Certified and Socially Maladjusted Groups

for t-Test Values on DLA Subtest Scores

(Each Test Based on 65 df)

	t-Test Values						
	Certified Vs.	Certified Vs.	Non-Certified Vs.				
Variable	Non-Certified	Socially Maladjusted	Socially Maladjusted				
DLA-Vocabulary	0.34	0.33	0.10				
DLA-Motor Speed	1.15	0.66	0.39				
DLA-Free Association	2.20*	1.85	0.25				
DLA-Designs	0.01	0.75	0.64				
DLA-Auditory Attention Span	0.31	0.57	0.73				
DLA-Social Adjustment	0.57	0.89	0.29				
DLA-Visual Attention Span	0.11 :	0.47	0,31				
DLA-Disarranged Pictures	0.71	1.28	1.65				
DLA-Oral Directions	1.70	1.74	0.08				

*Significant at .05 level

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certified group and the socially maladjusted group.

Findings for the Bender Gestalt Test

The final instrument used by the clinic was the Bender Gestalt Test. The results from the use of that test, using the Koppitz scoring method, are shown in Table 8.

Table 8

<u>Mean Bender Gestalt Scores, Using the Koppitz Scoring Method,</u> of Certified and Non-Certified Groups, and Observed <u>t-Test</u>

		<u>Certified</u>	Non-Certified	<u>t-Test</u> ‡
Bender Mean	Score	4.6	3.6	2,66*
<pre> #Observed t confidence </pre>	necessary : 2.01	for significar	nce at .05 level	of

*Significant at .01 level of confidence.

The certified group of children (those diagnosed as emotionally disturbed) scored significantly different from the non-certified group of children and in the direction of greater error on the Bender Gestalt Test. The procedure for the Koppitz method of scoring is to obtain the sum of the errors, omissions, and faulty gestalt patterns. Hence it would appear that there is a highly significant difference between these groups of children in the area of visual-motor development (t - 2.66), significant at the .01 level.

Factors Related to a Reduction in the Number

of Variables Analyzed in the Study

Prior to computing the familial and other remaining data, simple means were calculated, and those which were obviously near agreement were not computed. Those variables dropped for this reason were:

1. Number of Siblings

2. Term of Pregnancy

3. Serious Illnesses or Accidents

4. Clinical History of Family

5. Age

6. Ordinal Position

7. Number of Parents in Home

It should be noted that a coding process was devised on the basis of which data could be computed electronically. The following coding system was used in regard to the remaining variables:

1. Parents

instability - 1

stability - 2

2. Se::

male - 3 female - 4

The results computed for these remaining variables are shown in Table 9.

Table 9

Mean Scores of Remaining Variables of Certified and

and Non-Certified Groups and Observed t-Scores

Variable	<u>Certified</u>	Non-Certified	<u>t-Test</u> ¥	
Parental stability	1.56	1.93	2.66*	
Sex	3,15	3,27	.93	

#Observed t-score necessary for significance at .05 level of confidence: 2.01

*Signif:.cant at .Ol level of confidence

Regarding parental stability, one may see that the score of 1.93

out of a possible 2.0 (meaning perfect stability according to criteria set down in Chapter III of this study) indicates that the non-certified group consisted of children whose parents were relatively free of known alcoholism, narcosis, psychopathology, and tendencies to separate from or desert each other.

The certified group, on the other hand, seemed to have a significant number of the above-cited variables within their home and family life.

While it was also planned to obtain each child's group mental rating and achievement test scores (see Appendix B), certain technical difficulties made this impossible.

A total of 35 test and clinical variables was quantified and recorded for each subject. Every effort was made to guarantee the confidentiality of these data.

Issues Growing Out of the Pilot Phase of the Study --

An Introduction to the Second Phase of the Research

It will be recalled that a prime consideration of this research has been an attempt to determine the significance of the screening procedures utilized by the Psychological Clinic for assigning pupils to classes for the emotionally disturbed. Of equal concern, however, has been an attempt to ascertain an economical screening battery which might reflect those variables considered significant in this process.

The fact that statistically significant differences were found in the two areas of visual-motor development and parental stability, seemed to indicate that differences between the two groups were real and not artifacts of the testing procedures. Hence, it seemed possible and desirable to proceed with the second phase of the research which was to determine a more economical index of pathology than had initially been employed at the clinic.

In view of the work-up of the standardized intelligence test data, which produced no substantial differences between the two groups (only Block Design on the WISC and Free Association on the DLA reached levels of significance), the position was taken that indices to pathology might be more appropriately sought through the use of projective techniques. The resulting data from this effort constitutes the main thrust of the second phase of the research.

The use of projective techniques seemed warranted in this instance for several reasons. It would appear that the presence of a certain amount of pathology does not detract from an individual's cognitive ability to respond in certain normative ways. Hence, a person may experience acute emotional disturbance and yet not have his intelligence test scores affected. By the very nature of projective devices, which are ambiguous, unstructured stimulus material, an individual's response is more likely to reflect the condition of his emotional health. With factors such as these in mind, a retest of the children was initiated in which a battery of projective devices was employed. The areas of significance which emerged in the pilot phase of the research served to undergird the emphasis in this battery. These factors were parental stability and visual-motor development. The projective device which seemed to show the most promise for the purposes of this study was projective drawings. It seemed logical to require the children to produce drawings because in this manner, home and family attitudes might be revealed, as well as factors more traditionally analyzed in personality diagnosis.

In view of considerations such as these; the following test battery

was adopted:

- 1. House-Tree-Person Test (achromatic and chromatic)
- 2. Draw a Family Test (achromatic and chromatic)
- 3. A multiple-choice format for Cards IV and VII of the Rorschach Test
- 4. Bender Gestalt Test (repeat)

Factors Related to the Selection of the Projective Techniques

It was assumed that the House-Tree-Person Test (achromatic), using Buck's quantitative scoring method, would reveal the child's perception of self and environment, and that the Post-Drawing Inquiry (Appendix D), devised by Buck, would give indications of the child's attitude toward the home situation. This scoring technique is designed to provide intelligence scores as well. It is purported that the chromatic drawings tend to reveal amount of "personality integrity and emotional adequacy" (Hammer, 1958).

Both the chromatic and achromatic versions of the Draw a Family Test are designed to reveal the child's perceptions of his family and its patterns of relationships.

Attitudes toward parents could be explored further by asking the child to react to Cards IV and VII of the Rorschach Test, which have come to be known as the "father" and "mother" cards respectively. These responses would be of a forced-choice nature in which only one of five responses is chosen for each card. The list of responses (Appendix E) was devised by Nelder (1963), with the cooperation of five experienced clinical psychologists, two of whom taught the Rorschach technique, and three of whom utilized this instrument in private practice. It was decided that the Bender Gestalt Test could be re-administered to determine if the differences between groups would remain significant. Statistical Treatment of Data in the Second Phase of the Research

While the basic findings of the second phase of the research will be given in Chapter V of this dissertation, it might be helpful to outline the scoring techniques for the projective data as well as the manner in which the results were treated statistically.

Quantification of the House-Tree-Person Test results in several scores. A "weighted flaw score" measures the amount of malproportion and missed detail in the drawings; a "weighted good score" credits good proportion, attendance to detail, and dynamic evidences in the drawings; a "net score" is attainable, which is the difference between "good" and "flaw" scores, and a "raw g" score may be computed by determining the non-weighted difference between "good" and "flaw" scores.

Because Buck had quantified his data in such a way as to derive an intelligence quotient for each score, the question arose as to why he attached special significance only to the IQ obtained from the raw score. It seemed to follow that all of the available data were not being utilized by Buck when he accepted as final only one of four available indices.

It was decided, therefore, to combine all of the scale scores in order to obtain the IQ measure by first deriving the four IQs and then taking their mean. It would then be possible to compare these IQs with the "raw g" IQs to find what differences, if any, would crystallize. Moreover, it would allow a comparison of both H-T-P EQs (average and "raw g" and the standardized test IQs in order to note significant differences. Nowhere in his monograph does Buck mention ever having done this.

In the second phase of this study, then, the added variable,

termed "Buck Average IQ," will be compared with standardized test IQs, as will the IQs obtained by calculation of the "raw g," or Buck's preferred method. It is believed that the mean of the "raw g" intelligence quotients of the House-Tree-Person Tests will vary significantly from the means of the DLA and WISC intelligence quotients in the group diagnosed as emotionally disturbed, but not for the group returned to regular classes. Such a difference is suggested by conclusions reached by Buck in some of his later studies. Essentially, he concluded that significant correlations between the H-T-P and tests of general intelligence, such as the Otis, Stanford Binet, and Wechsler, exist "only when (1) the subjects are relatively free of personality flaws; or (2) the subjects are so deteriorated and/or maladjusted that all test scores are depressed thereby" (Buck, 1949).

Since the extremely maladjusted cases were excluded from our sample of 39 disturbed children and clinical examination has revealed none of them to be "relatively free of personality flaws," it is reasonable to expect that H-T-P intelligence quotient scores will differ significantly from standardized intelligence test scores.

In the Post-Drawing Inquiry of the H-T-P, such characteristics as self-concept, sex identification and familial attitudes tend to emerge. It was believed also that group responses for the certified group would vary significantly from responses for the non-certified group, and that the variation would tend to be in the direction generally regarded as unhealthy by experts in the field of psychodynamics.

In view of the fact that the modified Rorschach test was designed to reveal a scaled measure of parental attitudes, one for each parent, it was felt that a significant difference between the certified and

non-certified group means on this instrument might be found.

Statement of Hypotheses

In an attempt to study these variables, the following hypotheses were developed:

- 1. There is a significant difference between "functional" and "potential" intelligence among those children placed in classes for the emotionally disturbed, but not among those children returned to the regular grades.
- 2. There is a significant difference between children placed in classes for the emotionally disturbed and those returned to regular grades in assessed attitudes pertaining to self-concept, sex identification, and familial relations.
- 3. There is a significant difference between children placed in classes for the emotionally disturbed and those returned to regular grades in the degree of positive attitudes toward parents, as scored on the modified Rorschach test.
- 4. There will be a significant difference in visual-motor development between children placed in classes for the emotionally disturbed and those returned to regular grades using the Koppitz scoring on the Bender Gestalt Test.

In the following chapter, a presentation of findings related to these hypotheses will be given.

CHAPTER V

PRESENTATION OF FINDINGS

Principally, this chapter will consider the data accumulated in the second phase of the study in terms of the statistical analyses of these data. In each instance the findings will be presented in relation to the four hypotheses which were of basic concern in the research. An analysis of variance technique was used to test for mean differences between the certified group and the non-certified group (Factor A) as well as to test for differences between types of repeat measures (Factor B) for the four variables.

Two of the statistical tests dealt with comparing an average standard IQ score which was obtained by averaging the DLA IQ and the WISC Full Scale IQ with the Buck H-T-P IQ.

Additional treatment of the data constituted a comparison of a Rorschach test score and a Bender test index in an analysis of variance design. The Rorschach score combined reactions to the "father" and "mother" cards, and the Bender index consisted of repeat measures taken during the span of one year.

Hypothesis I

Overview of Hypothesis I

Intelligence refers to the totality of concepts and skills, the techniques or plans for coping with problems, which have crystallized out of the child's previous experience (Vernon, 1965).

This quotation reflects the position of a number of current thinkers in the behavioral sciences. For example, Ferguson (1954), Hebb (1948),

Hunt,(1944), and Piaget (1950), all point to a need to regard intelligence as a complex phenomenon. They refer to flexible schemata (Piaget), phase sequences (Hebb), or plans which evolve through the interaction of the total personality and its environment. This implies a consideration of variables such as motivation, organic and social drives, curiosity and interests, as well as familial, cultural, and educational variables.

It is but a short step, then, to the position of Kagan, Sontag, Baker, and Nelson (1958), who found that intelligence quotients may be increased in children through the arousal of need achievement, competitive striving, and curiosity about nature, due to the fact that these attributes may facilitate the acquisition of skills that are measured by the intelligence test.

In a consideration of the plausibility of the first hypothesis, one should be aware of the contribution of Weisskoph (1951), who reviewed the research dealing with the relationship between intelligence and personality. She found that she was able to classify 63 references into nine general categories, ranging from "Lack of Parental Reward" to "Desire to Avoid Self-Evaluation," each of which may be considered as a handicap to intellectual functioning.

Results of Testing Hypothesis I

The first hypothesis tested was:

There is a significant difference between "functional" and "potential" intelligence among those children placed in classes for the emotionally disturbed, but not among those children returned to the regular grades.

The findings related to this hypothesis are presented in Table 10 in terms of means and standard deviations of the IQ measures for each of

Table 10

<u>Means and Standard Deviations on the Raw G IQ, the Buck</u> <u>Average IQ, and the Standardized Test IQ Scores for</u>

the Certified and Non-Certified Groups

	<u>House</u> -T	<u>Standardized</u>	
Group	<u>Raw G</u> IQ	<u>Average</u> Buck IQ	<u>Test</u> IQ
Certified - Mean	68.5	• 69.7	91.4
- S.D.	9.0	9.2	10.3
Non-Certified - Mean	86,2	85.4	86.4
- S.D.	13.5	10.1	13.3

It is seen that, while the Buck "raw g" mean IQ for the certified group is 68.5, with a standard deviation of 9.0, the mean IQ for the noncertified group on the Buck test is 86.2, with a standard deviation of 13.5, which reflects a 17.7 mean difference between the two groups. Comparing the average Buck IQs, which it will be recalled used all the H-T-P data for calculation, one finds only slight differences. The latter score is 1.2 mean IQ points higher in the certified group and only 0.8 mean IQ points lower in the non-certified group. Hence, it would appear that either of these scores may be used in a comparison with the standardized test IQs with no essential change in statistical results.

Looking at the standard average IQ for the non-certified group first, it is seen that there is high agreement among the three IQ measures, the variation being one IQ point or less. Even the dispersion, reflected by the standard deviation, is practically in agreement if one compares the standardized IQ to the "raw g" IQ which, of course, is the more important
of the two projective scales. The IQ means obtained for the certified group, on the other hand, show a considerable disparity. As previously noted, this group earned a mean "raw g" IQ of only 68.5, and a mean standardized test IQ of 91.4, which resulted in a mean IQ difference between the two measures of 22.9 points. This must be regarded as a large difference, especially in light of the mean IQs cited for the noncertified group. Figure 1 shows a plotting of the interaction effects of the two sets of IQs.



LIGULC I

<u>Plot of Interaction Effects for Raw Buck IQ vs. Standard</u> <u>Mean IQ. Certified Group vs. Non-Certified Group</u>

The data cited in Table 10 were examined for any significant differences between the two groups through the use of analysis of variance.

Table 11 shows the results of the comparison of Buck's "raw g" IQ with the standardized test IQ.

Table 11

Raw G	IQ	Scores	Versus	Standard	Score	IQ.

Ana	<u>alysis of Vari</u>	ance Res	sults	
Source	SS	DF	MS	<u>F</u>
Between Subjects				
А	746.82	l	746.82	5.35
Error (Between)	6420.62	46	139.58	
Within Subjects	•	·		
В	6741.87	1	6741.87	64.54
АхВ	2435,63	1	2435.63	23.32**
Error (Within)	4805.25	46	104.46	
Total	21150.19	95		

**Indicates F-value significant at .05 level or better

It is noted from Table 11 that the interaction between group and type of measure was highly significant (F = 23.3 with 1 and 46 df., p = <.001). Simple effects tests were, therefore, computed. In such cases, main effects are not tested since no overall main effect can be explained without taking into account the other factor.

Results of the simple effects test are presented in Table 12.

The simple effects test for these data was computed in order to compare the four IQ scores. A for Bl in the table is the comparison of "raw g" IQ scores for the certified and non-certified groups. It will be recalled that there was a mean difference in IQ of 17.7, in favor of the non-certified group. This difference is highly significant with a p of < .001. A for B2 compared the certified and non-certified groups in regard to standardized IQ scores. These differences were not significant

Table	12
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<u>Results of Simple Effects Test on Raw G IQ (B1) vs. Standardized Test</u> <u>Score IQ (B2) for Certified Group (A1) vs. Non-Certified Group (A2)</u>

Source	DF	MS	F	P
Raw g Score				
Certified vs. Non- Certified Groups A for Bl	1	2940.0	21.06	p < . 001
Standardized IQ Score				
Certified vs. Non- Certified Groups A for B2 Error (Between)	1 46	242.4 139.6	1.74	n,s.
Certified Group Raw g Score vs. Standardized IQ				
B for Al	1	9177.2	87.82	p < . 001
Non-Certified Group Raw g Score vs. Standardized IQ	2			
B for A2 Error (Within)	1 46	0.3 104.5	0.002	n.s.

(F = 1.74). B for Al compared the two scores which were most pertinent to the first hypothesis of this study, that is, the "raw g" IQ and the standardized test IQ scores for the certified group. Arithmetically, there was a 22.9 IQ point difference between these two scores and statistically this difference was found to be highly significant (F = 20.66, p < .001). The last pair of scores, B for A2, were the "raw g" IQ and standard test IQ for the non-certified group. No significant difference between these two scores was found (F = 0.07).

The discrepancy between the Buck Average IQ score and the Buck "raw g" score were so slight that a cursory look at these data in Table 10 would have been sufficient to suggest that no new significant differences would be obtained from an analysis of the Buck Average IQ score in comparison with the standardized test IQ score. These data were, nonetheless, processed according to the design of the research.

Table 13 give the analysis of variance results.

Table 13

Analysis of Variance Results, Average Buck Score IQ (B1)

Vs. Standard IQ (B2) Certified Group (A1) Vs.

Non-Certified	Group	(A2)
		` <u> </u>

Source	<u>55</u>	DF	MS	<u>F</u>	P
Between Subjects					
А	536,62	l	536,62	4.29	
Error (Between)	5757.88	46	125.17		
Within Subjects					
В	6248.43	1	6248.43	63.22	
АхВ	2042,09	1	2042.09	20.66	р < .001
Error (Within)	4546.23	46	98.8Z		
Total	19131.25	95			

Although a slightly smaller F-value than was true in the case of the comparisons drawn between the "raw g" IQs and standardized test IQs was obtained (F = 20.6, 1 and 46 df., p = < .001), the degree of significance remains the same. It should be recalled that the Average Buck IQ score was derived by using all four of the IQs obtainable from the H-T-P test and averaging them into a final mean score.

Inasmuch as there is such strong agreement between the "raw g" and the average Buck IQs, and between the resultant analysis of variance, Tables 11 and 13, it may be expected that the simple effects test results for the average Buck IQs will closely compare to the simple effects test results of the "raw g" IQs. Such, in fact, is the case. Table 14 details the simple effects results.

Table 14

Simple Effects Test	t <u>Resul</u>	ts, <u>Average</u>	<u>Buck</u> IQ	(<u>B1</u>) <u>Vs</u> .
Standardized I	<u>(B2</u>)	for <u>Certific</u>	ed Group	(<u>A1</u>)
<u>Vs.</u> Nor	<u>a-Certi</u>	fied Group	(<u>A2</u>)	
Source	DF	<u>MS</u>	E	P
Buck IQ				
Certified Group vs. Non-Certified Group A for Bl	1	2336.3	18.66	p < .001
Standardized IQ			u	
Certified Group vs. Non-Certified Group A for B2 Error (Between)	1 46	242.4 125.2	1.94	n.s.
Certified Group Buck IQ vs. Standardized IQ				
B for Al	1	8284.0	83-84	₽<.001
Non-Certified Group				
Buck IQ vs. Standardized IQ B for A2	1	6 5		D 2
Error (Within)	46	98.8	0	H.S.

Replacing "raw g" IQ with Average Buck IQ, there continues to be a highly significant difference between H-T-P IQ and standardized test IQ scores for the certified group; a highly significant difference between certified and non-certified groups of the H-T-P test; no significant differences between groups of standardized test IQ; and no significant differences between H-T-P IQ and standardized test IQ scores for the noncertified group.

Discussion of Hypothesis I Results

A number of meaningful findings seemed to have emerged from the testing of the first hypothesis. A most important finding is that a group of children certified for classes for the emotionally disturbed, performed significantly more poorly on a projective test of intelligence than they performed on a standardized test of intelligence. Paraphrased with language used in part of Hypothesis I, there was a significant difference between functional and potential intelligence among those children placed in classes for the emotionally disturbed.

This finding is in agreement with earlier-cited research by Goodenough (1926), Hanvik (1953), and Machover (1949), as well as Buck (1948) and Gunzburg (1955). Each of these investigators, it may be recalled, stated in one form or another that "emotionally disturbed children do not draw the human figure in a fashion commensurate with their intelligence as measured by a standardized IQ scale." (Hanvik, 1953).

Of equal importance is the finding that another group of children, who were screened along with those ultimately certified for placement in special classes for the emotionally disturbed, and who were returned to the regular grades, performed as well on a projective test of intelligence as they performed on a standardized test of intelligence. This was, essentially, the position of the second part of Hypothesis I.

More specific information which has come out of the testing of Hypothesis I is relevant to the H-T-P test. The decision to average all four H-T-P IQs and compare them to the "raw g" IQ resulted, of course, in gathering, computing, and analyzing of additional data. As was seen from this study, at least, there was no appreciable difference between IQs based on the "raw g" score, and IQs based on all four raw scores. It would seem now, after the fact, that Buck, himself, probably did the same type of thing in some of his earlier work before deciding that using the "raw g" score was as reliable and valid a method of obtaining a H-T-P IQ as any other method of using or combining his scores.

In any case, for purposes of this study, the results of testing Hypothesis I, with resultant ps of <.001, indicate the presence of highly significant differences within the data. These results lead to the conclusion that children certified for classes for the emotionally disturbed have a functional IQ which is significantly lower than their potential IQ, but such is not the case for children who are returned to the regular class.

Hypothesis II

It will be recalled that the data for this hypothesis consisted of questions in a Post-Drawing Inquiry of the House-Tree-Person Test. Fiftyeight inquiry questions were administered to each child after the drawings were completed. An examination of these results revealed that 13 of the inquiry questions seemed sufficiently related to the variables of this research to be considered potential distinguishing characteristics for the certified group of children in the study. These 13 items were then grouped according to the variables which comprised Hypothesis II, and tested for statistical significance.

Overview of Hypothesis II

One of the implications drawn from Weisskoph's review of the

research, cited earlier, as well as that of Kagan and his associates, is that there is a positive relationship between sound mental health and the ability to utilize one's potential to the fullest; conversely, they were able to show that the presence of psychopathology diminishes one's level of functioning, in terms of one's potential.

Results of Testing Hypothesis II

The second hypothesis tested was:

There is a significant difference between children placed in classes for the emotionally disturbed and those returned to regular grades in assessed attitudes pertaining to self-concept, sex identification, and familial relations.

Results from the testing of this hypothesis are shown in Table 15.

It is seen that the three variables, "self-concept," "sex identification," and "familial relations" contain a total of 13 questions taken from 58 Buck Post-Drawing Inquiry items. Of those items, considered by Buck an appropriate self-concept index, six seemed, from inspection, sufficiently varied to suggest the possibility of significant differences between the two groups. These "self-concept" items, along with the items for "sex identification" and "familial relations," were taken from the original 58 items which collectively constituted the Post-Drawing Inquiry for this study. The specific wording of the six items for the "selfconcept" is given in Table 15. It is seen that three of these items relate to the drawings of the "tree" and three of them grew out of reactions to the drawings of a "person."

The statistical treatment for these data was organized according to a Chi-square design. This approach was considered procedurally appropriate

Table 15

Results of 13 Chi-Square Tests on PDI Variables

		Variable	Responses	Certified <u>Group</u>	Non-Certified <u>Group</u>	<u>x²</u>	Þ
I.	Self-	Concept					
	T4.	"Is that tree alive?"	Yes	29	13	1.22	n.s.
			No	6	0		
	т8.	"Is it by itself or with a	By itself	23	2	7.71	.01
		group of trees?"	With a group	12	11		
	Т9.	"Is the tree above, below,	Even	8	9	7.00	.01
		or even with you?"	Above or below	27	4		
	P11.	"Is that person well?"	Yes	28	12	0.34	n.s.
		-	No	7	1		
	P12.	"Is that person happy?"	Yes	24	11	2.18	n.s.
			No	11	2		
	P13.	"How do you feel about	Favorable	18	11	7.48	.01
		this person?	Unfavorable	17	2		
II.	<u>Sex</u> I	dentification					
	P1.	"Is that a man, woman, boy	Same sex as subject	29	8	1.38	n.s.
		or girl?"	Opposite sex	6	5	4	
	Т5.	"Does it look more like a	Same sex as subject	16	12	6.28	.05
		man or woman?"	Opposite sex	19	1		
III.	Famil	ial Relations					
	T12.	"Where would the sun be?"	Right corner	22	5	1.10	n.s.
			Left corner or center	13	8		
	H7.	"Whom would you like to have	With family	11	13	12.31	.01
		living there with you?"	Other	24	0		•
	н8.	"Is it close or far away?"	Close	13	11	6.75	.01
			Far away	22	2		
	н9.	"Is it above, below, or	Even	8	10	9.63	.01
		even with you?"	Above or below	27	3		
	H12.	"Is it a happy, friendly	Yes	12	11	6.44	.05
		house?"	No	20	2		
			No response	3			

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due to the fact that these data were categorical rather than continuous. The variables relating to sex identification and familial relations were treated in similar fashion in terms of statistical treatment of these data.

Of the six PDI items which constituted the self-concept index, three emerged as statistically significant. It may be concluded, therefore, that the certified group of children considered their drawings of a "tree" to be "by itself" ($X^2 = 7.71$, p = .01) more frequently than did the non-certified group, and saw their "tree" as being situated above or below (the self) more frequently than did the non-certified group ($X^2 = 7.00$, p = .01), and reacted in an "unfavorable" way toward their drawings of a "person" more frequently than was the case with the noncertified group ($X^2 = 7.48$, p = .01). Concerning whether or not the "tree" drawings were alive ($X^2 = 1.22$), the "person" drawings were "well" ($X^2 = 0.34$), and whether or not the "person" drawings were "happy" ($X^2 = 2.18$), for the certified and non-certified groups, no statistically significant differences were found.

When attention is turned to the variable of sex identification as defined for the purposes of this research, it is seen that of Buck's suggested PDI items related to this variable, two of them seemed sufficiently different for the certified and non-certified groups to warrant examination through the Chi-square design. Of the two inquiry items related to the variable of sex identification, one emerged as statistically significant. The certified group, when requested to ascribe a sex to the "tree" drawing, labeled it as a member of the opposite sex more frequently than did the non-certified group ($x^2 = 6.28$, p = .05). On the other item related to sex identification, both groups were consistent in labeling the drawn "person" as a member of the same sex as themselves $(x^2 = 1.38)$.

The last variable considered in Hypothesis II was that of familial relations. As in the case of the variables of self-concept and sex identification, the total number of items given by Buck, which relate to this variable, were scanned in order to determine which of them might conceivably differentiate between the two groups in this study. The results of the Chi-square analysis of these data are given in Table 15 and, of the five items pulled by the investigator because of potential statistical significance, four did in fact reach significant levels of difference. By way of further delineation of these items, it is noted that one of them grew out of post-inquiry reactions to the "tree" drawings and four of them were related to the "house.", The group differences in inquiry reactions to the "tree" item, concerned with the location of the "sun" in these drawings, did not reach statistical significance in the Chi-square analysis of these data ($X^2 = 1.10$). The four "house" inquiry items all reached statistical significance when the two groups were compared, three of these items at the .01 level of confidence and one of them at the .05 level. Responses to the inquiry as to whom the subjects would like to "live with" in the "house" more frequently resulted in "persons other than family members" as the choice of the certified group than was true in the case of the non-certified group in the study ($X^2 = 12.31$, p = .01). The inquiry concerned with whether or not the "house" was seen as "close" or "far away" differentiated between the two groups at a highly significant level ($X^2 = 6.75$, p = .01). The certified group perceived the "house" as being "far away" and the non-certified group considered the "house" to be "close by." Another positional inquiry item was

concerned with whether or not the "house" was perceived as being "above," "below," or "even" with the subject. There was a significant difference in the reaction of the two groups to this aspect of their drawings, with the certified group perceiving the "house" as being "above" or "below" the subject more frequently than was the case with the non-certified group ($X^2 = 9.63$, p = .01). The last inquiry item taken from the Buck list, which seemed germane to the familial relations variable, was whether or not the subjects imputed a "happy" or "friendly" mood to the "house" in their drawings. The groups were significantly different in regard to this item, though not as much so as in the case of the other three "house" items ($X^2 = 6.44$, p = .05). The certified group seemed to see the "house" as given to a less "friendly" or "happy" mood than was true of the ron-certified group.

Discussion of Hypothesis II Results

Betweer-group differences were hypothesized for the certified and non-certified groups in terms of the three variables in the second hypothesis. These variables were self-concept, sex identification, and familial relations.

<u>Self-Cencept</u> Most of the investigators of the self-concept, quoted in Chapter II, conceived of this variable is a phenomenon closely related to the way a person behaves, the way in which he perceives others, and his ability to learn. This phenomenon seems of vital significance in the total life style of the individual, in that findings which relate self-acceptarce and basic personality adjustment in a significant way continue to emerge. See Baldwin (1945, 1955), Levy (1943), Phillips (1964), Sears, Maccoby and Levin (1957), Wattenberg and Clifford (1964), and Wylie (1957, 1961).

In view of the fact that self-acceptance, personality adjustment, and the self-concept are seen as intricately related, it is reasonable to conclude that the individual who possesses a high level of personality adjustment and self-acceptance is also one whose perceptions of self tend to be positive and one who, in like manner, tends to perceive his environment and other individuals in a positive way.

It will be recalled that, of the six inquiry items dealing with the self-concept, three emerged as statistically significant. The group of children certified for placement in classes for the emotionally disturbed tended to see their drawings of the "tree" as standing "by itself," as being "above" or "below" them, and they tended to verbalize "unfavorable" feelings about the drawings of the "person."

While several questions seem germane to the issue of how a child may relate to a group in terms of his self-concept, Question T8 seems specifically related to the potential quality of a person's interaction with a group. The content of Question T8 relates to whether or not the "tree" is seen in isolation or as a part of a group. It is noted through an examination of the findings that the certified group, by almost two to one, perceived the "tree" as being alone. On the other hand, the noncertified group more frequently perceived the "tree" is a representation of the self, to perceive it as standing alone is to suggest that the individual, for one reason or another, does not ordinarily perceive himself as a member of a group but rather perceives himself as being isolated, alienated, or estranged from his associates. These perceptions of isolation or alienation of the self with respect to the group are strongly suggestive of little self-acceptance, of limited personality adjustment, and of

low self-esteem.

Sex Identification There were two inquiry questions which dealt with the variable of sex identification. One of these questions related to drawings of the "tree" and the other one related to the "person." In the case of the "tree," significant differences were noted between the certified group and the non-certified group (p = .05). No significant differences were found for the group on the question relating to drawings of the "person." In each case, the subjects were required to ascribe a "sex" to his drawing, that is, to the "tree" and to the "person." Regarding these results in the projective sense, it is not unreasonable to assume that responses tend to reflect more latent tendencies when an individual is required to react in relatively ambiguous situations. The act of identifying a tree, for instance, in a way not usually designated, that is, by sex, probably results in the tapping of preconscious or unconscious processes. On this inquiry item, the certified group was more varied in their perceptions of the "tree." They saw it about as frequently as male or female with little regard for the category of their own sex. On the other hand, all but one of the children in the non-certified group identified their drawing of a "tree" as being a member of the same sex as themselves. In the case of the drawings of the "person," no significant differences were found in the perceptions of the certified and non-certified group.

Results related to the position of the "tree" indicate that the certified group, when compared with the non-certified group, tended to see the "tree" as being "above" or "below" themselves (p = .01), or speaking projectively, they tended to reveal unrearistically high or low self-perceptions. Twenty-six of the 27 certified children perceived

their "tree" as being "above" themselves. This may relate to over-compensation or reaction formation as a defense. It may also be that this indicates an inordinately high "ideal self" for the certified group with no possibility of its realization in reality by these individuals. It will be remembered that the usual index to the self-concept considers a discrepancy between the "real self" and the "ideal self" as being indicative of poor self-regard. Of course, another possible explanation for the emergence of these findings is that these children perceive themselves in a negative way; that is, they have poor self-regard which militates against the perception that they would be able to live up to high standards, or even satisfactory standards. When it is seen that the certified group reacted unfavorably to the picture of the "person" they had drawn, a discrepancy between perceptions of the ideal self and the real self does, in fact, emerge for this group (p = .01). These findings are in general agreement with other research regarding the self-concept and self-acceptance (Baldwin, 1945; Wylie, 1957).

<u>Familial Relations</u> Four of the five inquiry items proved statistically significant in regard to the variable of familial relations. One of these items which dealt with the position of the sun in the "house" drawing and purported, by Buck, to reflect the subject's perception of his position with regard to "warmth-producing" individuals within his home, was not statistically significant. With respect to whom the subjects would like to have reside with them in their drawing of a "house," the certified group selected persons other than members of their immediate families by more than two to one, while all members of the non-certified group preferred to live with their families (p = .01). Three possible explanations for this finding are discussed below in reference to certain other inquiry items regarding perception of the drawn "house." The certified group saw the "house" as being far removed from themselves (p = .01), which tends to strengthen the notion that these children are of low self-esteem, as well as that they lack feelings of closeness between themselves and the drawn "house," such that it might be easy to perceive persons other than family members living there.

As to whether the "house" was perceived as being "above," "below," or "even" with the subject, the findings for the certified and non-certified groups were significantly different (p = .01). The certified group more frequently perceived the drawn "house" as either "above" or "below" themselves. These findings seem to indicate that there is a perception on the part of the certified group that their standards are in basic disagreement with those standards established by the parent figure in the While the category discussed above was statisticized as a unit, home. further analysis of its content is quite revealing. While 27 children perceived the "house" as either "above" or "below" themselves, only four of these children perceived the "house" as below themselves, that is, situated below their own levels. Hence, 23 children gave responses which could be interpreted as being reflective of standards which were perceived as being overly high. As was the case with the position of the "tree" drawings, it may be stated that these children (in the certified group) perceive themselves in a negative way, and this self-concept is continually reinforced by unrealistic standards imposed in the home.

The final inquiry item related to familial attitudes was one dealing with the amount of perceived "happiness" and "friendliness" seen in the drawn "house." The certified group perceived the "house" as an "unfriendly" and "unhappy" place in which to live ($\gamma = .05$), while the non-certified

group perceived the drawings of the "house" as "friendly" and "happy."

These results seem to support the research cited earlier regarding familial disturbances and child psychopathology (Badami, 1962; Chazan, 1965; Martin and Chanwell, 1962; Nurse, 1964; and Wolff, 1961).

Before leaving this discussion it is important to recall that these results were acquired through the division of subjects' responses in a dichotomous way, that is, "yes-no," "favorable-unfavorable," and the like. Generally, such a division is summarized through the use of a two-tailed test in a Chi-square design in order to determine which of the dichotomous sets of responses differs from other responses in the series in a significant way. Sometime after these results were computed and analyzed, however, it became apparent that these data might be analyzed further and appropriately by observing the direction of responses in a one-tailed test. This statistical operation could be done by using the non-certified group responses as the criterion measure and by weighing the certified group responses against those of the non-certified group. As indicated above, such a comparison could be obtained by using a one-tailed test and noting what directional tendencies might emerge for the certified group. All of the PDI items were analyzed without prior reduction in items as had been the case in the previous two-tailed statistical design. These results are shown in Appendix F.

It is noted that six were PDI items emerged as significant at the .05 level of confidence. When these measures were applied, four of the items seemed to pertain to the self-concept. In comparison with the certified group, the non-certified group perceived the "tree" as being "strong" and "healthy," and they were able to verbalize some type of reaction to the drawing of a "tree." Furthermore, the non-certified

group projected "moderate" weather conditions into the "person" pictures, while the certified group tended to project "extreme" weather conditions into their drawings.

In the two items which seemingly pertain to familial relations, it was found that the certified group, when compared to the non-certified group, tended to select a room for themselves which was far removed from doors or windows of the drawn "house" and usually on a level other than the main floor of the "house." The certified group also had a tendency to remain silent and did not verbalize an answer to the question of what the picture of the "house" made them think of.

In summary, it may be stated that Hypothesis II of the research was essentially confirmed. Hence, the certified and non-certified groups gave evidence of dissimilar patterns in regard to self-concept, sex identification, and familial relations. These two groups are basically different due to the fact that the certified group seems to possess low self-esteem, sex role diffusion, and tends to perceive the home and family in an unfavorable way. Moreover, the data suggest that this group feels alienated and isolated from others, and that unrealistically high standards of behavior are being imposed upon them, and that there is a lack of perceived happiness and friendliness in the home.

In regard to the non-certified group, these children seem to possess positive self-regard, appropriate sex role identity, and to perceive their home and families in a favorable way.

Hypothesis II[

The third hypothesis selected for inclusion in this research related to a consideration of the manner in which the certified and

the non-certified groups would react to certain projective devices.

It will be recalled that this hypothesis was tested through an analysis of the responses of the subjects to Cards IV and VII of the Rorschach test as scaled by Nelder (1963). The format of this adaptation was designed to evoke one of five possible responses for each card. It was assumed by Nelder that positive responses reflected positive attitudes toward parents and negative responses reflected negative attitudes toward parents. The test scale of one through five rated in a positive direction, with a higher score indicating more favorable attitudes.

Overview of Hypothesis III

Perhaps the most telling variables in the development of personality relate to the quality of child care provided in the family setting by parents.

Of more significance, however, is the manner in which this care is perceived by the child. This seems to be the case whether speaking of personality factors, such as aggression hostility, and anxiety, or the manner in which the child is able to mobilize his intellectual potential for productive achievement. See the works of Levy (1943), Maccoby and Gibbs (1954), Sears, Whiting and Nowlis (1953), and Sewell and Harris (1955).

In this dissertation, it has been assumed that the child's perception of his parents can, in fact, be reliably determined through the use of specific projective techniques.

Results of Testing Hypothesis III

The third hypothesis tested was:

There as a significant difference between children

placed in classes for the emotionally disturbed and those returned to the regular grades in attitudes toward parents.

The findings are given in Table 16.

A cursory analysis of the data given in Table 16 reveals that the responses of both groups to Card IV, the "father" card, were quite similar. In fact, the mean score of 2.5 for the scale as given by Nelder, which is indicative of a "neutral" reaction to parents, was approximated by both the certified and non-certified groups. The mean score for the certified group was 2.46 and for the non-certified group, 2.69.

Table 16

<u>Means and Standard Deviations on Rorschuch Test Cards IV and VII</u> <u>for the Certified Group and for the Non-Certified Group</u>

Rorschach Scores

Card IV (Father Card) Card VII (Mother Card)

Group	<u>Mean</u>	<u>S.D.</u>	Mean	<u>s.D</u> .
Certified $N = 35$	2.46	1.61	3.77	1.35
Non-Certified $N = 13$	2,69	1.59	4.46	1,15

In the case of Card VII, the "mother" card, however, the mean scores for the two groups, while indicating no significant differences, were scaled higher than in the case of the "father" card. This resulted in mean group differences within groups rather than between groups in the analysis of variance design. The F-ratio is given in Table 17 (F= 18.41, p = <.001).

<u>Analysis</u> of Varia	ance Summa	ry Tab	le for	Rorschack	<u>Scores</u>
Certified Grou	<u>ир (А1) Vs</u>	. <u>Non</u> -	Certifi	ed <u>Group</u>	(<u>A2</u>)
<u>Father</u>	<u>Card (B1)</u>	<u>Vs. Mc</u>	other <u>Ca</u>	<u>rd (B2</u>)	
Source	<u>SS</u>	DF	MS	F	p
Between Subjects				•	
A	4.06	1	4.06	2,306	n.s.
Error (Between)	80,93	46	1.76		
Within Subjects					
В	49.59	1	49.59	18.41	₽ < . 001
A x B	0,98	1	.98	0.36	n.s.
Error (Within)	123,93	46	2.69		

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Table 17

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In a general sense, there is no significant interaction between type of card and group, nor is there significant main effect due to group. There is a significant main effect, however, due to type of card, with both groups scoring significantly lower on the "father" card than on the "mother" card. It would appear that the "mother figure" is more favorably perceived by both groups.

Discussion of Hypothesis III Findings

The results presented in Tables 16 and 17 indicate that Hypothesis III has not been confirmed in this research. Based upon the assumption that reactions to Cards IV and VII of the Rorschach test would reveal attitudes toward fathers and mothers respectively, it was hypothesized that the certified group would react in a way which would be statistically different from the non-certified group. Possible reasons for failure to obtain significant between-group difference; may relate to one of two possibilities: either (1) there are, in fact, no differences between these two types of children in the perception of their parents; or (2) there are significant differences, but they did not emerge in the study due to the questionable validity of the instrument in terms of the manner in which this adaptation of a part of the Rorschach test was conceived, cr due to possible age-inappropriateness of the instrument. The first possibility, that there are no real differences between these groups in their perceptions of parents, is difficult to accept due to the abundance of research (see Chapter III) which documents heavily the relationship between psychopathology and perceived home and familial relations. See Badami (1962, 1965), Carek, Henderson and Holmes (1961), Chazan (1965), Martin and Chanwell (1964), Nurse (1964), and Pavenstedt (1965).

The findings for Hypothesis II also supported the existence of a

firm relationship between the presence of pathology in the individual and perceived family relationships. The second possible explanation for the finding that significant differences do not exist between the two types of children in the perceptions of their parents, seems the more reasonable one. If this is the case, the first possibility for failure to confirm the hypothesis, which relates to the construct validity of the test, must be abandoned. In brief, the construct validity of this test is based on the idea that Card IV of the Rorschach test will evoke responses which reveal attitudes toward one's father, and that Card VII will evoke responses which reveal attitudes toward one's mother. While the fund of research in this area is not overwhelming, there is enough to support the contention that these cards do, in fact, tap parental attitudes. See Chapter II; also Nelder (1963).

The second possible explanation for failure to obtain significant differences between the groups would seem to be the most plausible. The format of the test was constructed by Nelder for purposes of obtaining parental attitudes. It is believed by this investigator that the language used in the items, as well as the configurational impressions are, perhaps, more suited to adult perceptions (see Appendix D for test format) than may be true for children.

It is felt that a collection of children's responses to these two cards might be analyzed in order to obtain more representative responses for this age group and thereby provide a more valid and reliable extension of Nelder's original work.

In regard to the significant within-group differences which did emerge from these data, it is interesting to note that these findings confirm much available research. Both certified and non-certified groups in

this study revealed a much more favorable attitude toward their mothers than toward their fathers.

In the literature, one consistent finding is that children of most ages choose the mother as the preferred parent (Gardner, 1947; Harris and Tseng, 1957). The mother is seen as more friendly, less strict, less punitive, less threatening, and more nurturant (Kagan, 1956; Kagan, Hasken and Watson, 1961). Fathers are regarded as more powerful, more interfering, more competent, and as a major source of punishment (Emmerich, 1959, 1961; Kagan and Lemkin, 1960).

Fifth and sixth graders studied by Gardner (1947) enumerated the following dissatisfactions with their fathers: scolding, general irritability, poor adjustment with mother, and absent from home. Mothers were seen to possess greater understanding, better nature, and less domineering behavior.

Radke (1946) found that children's perceptions of both parents were similar in most indices with the exception of those measuring rapport. "As compared with mothers, fathers showed less rapport with their children, fewer shared confidences, less amount of time devoted to their children. The father was less of a supervisor, less affectionate, and yielding."

Kardiner (1939) states that the father, although standing in the background, is often the final authority, even though executive power is exercised through the mother.

Hypothesis IV

When the Pilot Study was conducted and data for 35 variables were analyzed, the Bender Gestalt Test results proved statistically different for the certified and non-certified groups of children in the study. It

will be recalled that the results for the variable of "parental instability" was also significantly different for the two groups in the Pilot Study. Results for the Bender Gestalt Test--a test which has been standardized as a measure of visual-motor maturity--were sufficiently encouraging to lead the investigator to attempt to develop an abbreviated set of indices which might screen persons for admission to special classes for the emotionally disturbed in a more efficient manner than had been the case.

Overview of Hypothesis IV

The results of the original data gathered for the Pilot Study revealed that the certified group scored significantly higher in errors than did the non-certified group on the Bender test (t = 2.66, p = .01). The Koppitz system of scoring errors was used in this analysis.

Retesting these children on the Bender test one year later served a threefold purpose. First, this retesting helped to establish the reliability of the Bender data; secondly, it presented a way of testing the stability of the children's perceptions; and thirdly, it was a way of determining if one year in a classroom for the emotionally disturbed had any effect upon visual-motor development. On the basis of the research cited in Chapter II, it would be expected that reliability and stability of performances in the two groups would be maintained over a year's duration.

Results of Testing Hypothesis IV

The fourth hypothesis tested was:

There will continue to be a significant difference in visualmotor development between children placed in classes for the emotionally disturbed and those returned to regular grades.

Means and standard deviations for both groups are indicated in Table 18.

Table 18

<u>Means and Standard Deviations on Bender Tests for</u>

Certified Group and Non-Certified Group

Bender Test

	Measu	ure l	Measu	ire 2
Group	Mean	<u>S.D</u> .	Mean	<u>s.D</u> .
Certified N = 35	4.6	2.4	4.8	2.3
Non-Certified N = 13	3.6	3.3	3.4	2.3

It is seen in Table 18 that the Bender scores have remained highly stable. The certified group on the first test had a mean of 4.6 errors; and one year later, the mean number of errors was 4.8. The non-certified group scored mean errors of 3.6 and 3.4, on the two tests taken one yea: apart. With this type of consistency, it could be expected that the significant differences in Bender Gestalt Test data would continue for the two groups over a period of a year.

The analysis of variance results in Table 19 substantiate this position.

The analysis of variance design was applied to the Bender test data. No significant differences were obtained on the interaction between group and test measures, nor on the main effect due to repeat testing. However, the main effect due to groups was significant (F = 4.18, p = .05) and showed that the certified group scored significantly higher than did the non-certified group on the Bender Gestalt Test.

	•				
<u>Analysis of Var</u>	iance Summa	ry <u>Tal</u>	<u>ble. Ce</u>	rtified	Group (A1)
<u>Vs</u> . <u>Non-Certif</u>	ied Group (<u>A2</u>).	<u>Bender</u> 1	Measure	<u>1 (B1</u>)
	<u>Vs.</u> <u>Bender</u>	Meas	<u>ure 2 (B</u>	<u>2</u>)	
Source	<u>SS</u>	DF	<u>MS</u>	F	P
Between Subjects					
A	27.3	1	27.3	4.18	p < .05
Error (Between)	300.2	46	6.5		
Within Subjects					
В	0.17	1	0.17	0.3	n.s.
АхВ	0.88	1	0.88	0.14	n.s.
Error (Within)	291.95	46	6.35		
Total	620.5	95			

Discussion of Hypothesis IV Findings

The results of the data presented in Tables 18 and 19 attest to the stability of the Bender Gestalt Test data over time for the two groups. These data also offer strong support to the idea that some relationship exists between emotional disturbance and visual-motor performance. Further, the certified group of children apparently had not experienced any learning which resulted in the improvement of their visual-motor coordination, although they had been assigned to special classes.

The hypothesis that there will continue to be a significant difference in visual-motor development between the certified and non-certified groups is accepted at the .05 level of confidence. These findings support, generally, the previously cited research regarding the relationship between personality adjustment and visual-motor coordination (Bender,

Table 19

1952; Keogh, 1965; Koppitz, 1964; and Merriman, 1960).

CHAPTER VI

SUMMARY, CONCLUSION, AND IMPLICATIONS OF THE RESEARCH

Summary

This study was an attempt to determine measurable personality variables which differentiated between children recommended for special placement in classes for the emotionally disturbed by their teachers, who were certified for this placement and those who were returned to their regular classes. In addition, an attempt was made to develop an economical, valid test battery for the future identification of emotional disturbance in children. The study consisted of two phases: A Pilot Phase concerned with differences between the certified and non-certified groups in the test data originally collected for screening purposes in the Detroit Psychological Clinic, and a second phase related to the determination of a more economical test battery.

Quantitative analysis of the Pilot Study data revealed that those children certified for special placement differed significantly from the children returned to regular classes, in regard to two variables. These variables were: (1) visual-motor perception as determined through the use of the Bender Gestalt Test, and (2) degree of parental stability as revealed in case history data. Areas considered a part of the screening test battery, but for which no significant differences emerged were: objective intelligence test data, parental employment, the presence or absence of parents in the homes, and the ordinal position of the child. In view of the fact than an inordinate amount of time is expended in

collecting data in these areas and yet they seemingly do not differentiate between the certified and non-certified groups, it was felt that a more meaningful test battery might be constructed, both more economical and more directly related to the criterion of emotional disturbance. The procedure for accomplishing this objective constituted Phase II of the research.

The main thrust of the research was defined in four hypotheses. These hypotheses were:

- 1. There is a significant difference between "functional" and "potential" intelligence among those children placed in classes for the emotionally disturbed, but not among those children returned to the regular grades.
- 2. There is a significant difference between children placed in classes for the emotionally disturbed and those returned to regular grades in certain assessed attitudes pertaining to selfconcept, sex identification, and familial relations.
- 3. There is a significant difference between children placed in classes for the emotionally disturbed and those returned to regular grades in the degree of positive attitudes toward parents, as scored on the modified Rorschach Test.
- 4. There will be a significant difference in visual-motor development between children placed in classes for the emotionally disturbed and those returned to regular grades using the Koppitz scoring on the Bender Gestalt Test.

Population and Procedures

The children who constituted the Pilot Study sample ranged between nine years and twelve years of age, all resided in the city of Detroit, and all attended Detroit Public Schools in 1965. Each child was referred for evaluation and possible special class placement by his classroom teacher with the approval of the school principal. The 39 certified children had a mean age of 10.3 years, while the 15 non-certified children had a mean age of 10.4 years. Boys made up 82.1 percent of the certified groups and 73.3 percent of the non-certified group. The second phase of the study, which grew out of the Pilot Phase, included 35 of the original 39 children who were certified by the clinic for placement in special classes, and 13 of the original 15 children who were returned to their regular classes.

An attempt was made to reach each of the children who made up the Pilot Phase of the study, and who, at the time, constituted the entire ' population of children in Detroit who were certified for special placement in classes for the emotionally disturbed, and for whom complete data were available in the files. The children were seen individually, usually in their schools, and were administered a test battery, specially devised for the second phase of this study. The battery consisted of:

- 1. House-Tree-Person Test (achromatic and chromatic)
- 2. Draw a Family Test
- 3. Nelder revision of the Rorschach Test
- 4. Bender-Gestalt Test (retest)

These test data were analyzed through an analysis of variance and Chi-square design.

Results

The data collected in this study confirmed Hypotheses I, II, and IV, outlined in the research. Hypothesis III was not confirmed as a result of the collected data. Hence, it was concluded that:

- I. There is a significant difference between "functional" and "potential" intelligence among those children placed in classes for the emotionally disturbed, but not among those children returned to the regular grades.
- II. There is a significant difference between children placed in classes for the emotionally disturbed and those returned to the regular grades in certain assessed attitudes pertaining to selfconcept, sex identification, and familial relations.
- III. There is no significant difference between children placed in classes for the emotionally disturbed and those returned to the regular grade in the degree of positive attitude toward parents as scored on the modified Rorschach Test.
 - IV. There is a significant difference in visual-motor development between children placed in classes for the emotionally disturbed and those returned to regular grades using the Koppitz scoring on the Bender Gestalt Test.

Conclusions

According to the findings of this study, children who are psychologically evaluated and certified for classes for the emotionally disturbed are not able to utilize their potential intelligence to the fullest; in definable areas they possess a more negative attitude toward themselves, and toward their home environment; and they are more limited in visual-motor development than are children who are psychologically evaluated and returned to regular grades.

These findings support the trends which Buck had discussed in writings of his research in which he states that the presence of personality flaws results in a noticeable decline in IQ points. If no personality flaws are present, there is significant agreement between H-T-P and standardized intelligence test IQs.

Results from the Pilot Study suggest that much information which does not necessarily contribute to diagnosis is obtained in a routine manner from children undergoing evaluation for special class placement. Most of the children screened for this placement received two intelligence tests; and an abundance of social, familial, and developmental data were gathered for them. According to the findings in the Pilot Phase of the study, such things as number of parents in the home, ordinal position, parental employment, and severe childhood anomalies were not significantly related to certification for placement in classes for the emotionally disturbed.

Data collected in the second phase of the research suggest that the children certified for placement in classes for the emotionally disturbed did not see themselves as being integral members of any group. They tended to feel alienated from both family and peers and they tended not to develop close personal relationships, due to the fact that in certain areas the measures of self-concept for this group tended to be unrealistically high or low. Such unrealistic perceptions of self would tend to give the impression that these children are, in face, different from others.

While all the children screened tended to view their parents in the same way, an unexpected finding was that they all had a significantly more

positive attitude toward their mothers than toward their fathers.

A final conclusion which may be drawn is that there seems to be visual-motor impairment in the certified group which relates in a significant way to other aspects of their pathology.

Implications

The implications of this research seem to be that school psychologists could, with a high degree of profit, examine in a critical way, the screening devices and procedures which they employ in their work. In a number of instances, a more abbreviated battery than is currently employed may be indicated.

Another implication which seems to grow out of this research is that further attention should be given to the criteria problem in regard to the assignment of children to special classes in the public schools. Particularly loes this seem to be the case in regard to helping teachers identify more appropriately these children.

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7070 Program # 0176

THREE-WAY ANALYSIS OF VARIANCE

This program will compute the statistics required for Three-Way Analysis of Variance.

A factor is defined to be one of the three variables or characteristics. The three variables or factors are referred to as Factor A, Factor B, and Factor C. These factors have r_1 , r_2 and r_3 categories or levels respectively. The program restricts the maximum number of categories permissible for any factor to 19.

By X_{kij} is meant an observed value which falls in category k of factor A, category i of factor B and category j of factor C.

The following statistics are computed and printed by this program:

Let: T =
$$\frac{\sum_{k i} \sum_{j} X_{kij}}{r_1 r_2 r_3}$$

Main effects due to Factor A:

Sums of Squares (SS(A)) =
$$\frac{1}{r_2 r_3} - \sum_k \left(\sum_i \sum_j X_{kij}\right)^2 - T$$

Degrees of Freedom =
$$r_1 - 1$$

Mean Square (MS(A)) = $\frac{SS(A)}{r_1 - 1}$

F Ratio = $\frac{MS(A)}{MS(ABC)}$

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7070 Program # 01760

Main effects due to Factor B:

Sum of Squares (SS(B)) =
$$\frac{1}{r_1 r_3} = \sum_{i} \left(\sum_{j} \sum_{k} X_{kij} \right)^2 - T$$

Degrees of Freedom = $r_2 - 1$

Mean Square (MS(B)) =
$$\frac{SS(B)}{r_2 - 1}$$

 $F Ratio = \frac{MS(B)}{MS(ABC)}$

Main effects due to Factor C:

Sum of Squares (SS(C)) =
$$\frac{1}{r_1 r_2} \sum_{j} \left(\sum_{i} \sum_{k} X_{kij} \right)^2 - T$$

Degrees of Freedom = $r_3 - 1$

Mean Square (MS(C)) = $\frac{SS(C)}{r_3 - 1}$

F Ratio = $\frac{MS(C)}{MS(ABC)}$
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7070 Program # 01760

FIRST ORDER INTERACTION

First Order Interaction AB:

Sum of Squares (SS(AB)) = $\frac{1}{r_3} = \frac{\sum_i \sum_k (\sum_j X_{kij})^2}{\sum_i k (\sum_j X_{kij})^2} = B = A = T$

Degrees of Freedom = $(r_1 - 1) (r_2 - 1)$

Mean Square (M(AB)) = $\frac{SS(AB)}{(r_1 - 1)(r_2 - 1)}$

 $F Ratio = \frac{MS(AB)}{MS(ABC)}$

First Order Interaction BC:

Sum of Squares (SS(BC)) = $\frac{1}{r_1} - \sum_{i} \sum_{j} \left(\sum_{k} X_{kij} \right)^2 - B - C - T$

Degrees of Freedom = $(r_2 - 1)(r_3 - 1)$

Mean Square (MS(BC)) = $\frac{SS(BC)}{(r_2-1)(r_3-1)}$

 $F Ratio = \frac{MS(BC)}{MS(ABC)}$

First Order Interaction CA:

Sum of Squares (SS(CA)) =
$$\frac{1}{r_2} \sum_{k} \sum_{j} (\sum_{i} X_{kij})^2 - A - C - T$$

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7070 Program # 01760

Degrees of Freedom = $(r_1 - 1)(r_3 - 1)$ Mean Square (MS(CA)) = $\frac{SS(CA)}{(r_1 - 1)(r_3 - 1)}$ MS(CA)

 $F Ratio = \frac{MS(CA)}{MS(ABC)}$

SECOND ORDER INTERACTION

Sum of Squares (SS(ABC)) = TSS-SS(A) - SS(B) - SS(C) - SS(AB) - SS(BC) - SS(BC) - SS(CA)

Degrees of Freedom =
$$(r_1 r_2 r_3 - 1) - (r_1 + r_2 + r_3 - 3 + (r_1 - 1)(r_2 - 1) + (r_2 - 1)(r_3 - 1) + (r_1 - 1)(r_3 - 1))$$

Mean Square MS(ABC) = $\frac{SS(ABC)}{r_1^r 2^r 3^{-1}}$

TOTAL

Total Sum of Squares (TSS) = $\sum_{k i} \sum_{j} x_{kij}^2 - T$

Degrees of Freedom = $r_1 r_2 r_3 - 1$

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7070 Program # 01760

INPUT FORMAT:

This program will perform the Three Way Analysis of Variance on any number of stacked sets of data. Each data set consists of the data cards preceded by a parameter card.

The parameter card consists of the following information:

- 1. The upper limits for each of the three levels.
- 2. The total number of data cards.
- 3. Any 6-digit number to identify the data set.
- 4. In addition, "-1" must be punched in columns 1-2 of the parameter card to distinguish it from the data cards. If the "-1" is missing from a parameter card, the succeeding data set will be ignored.

Parameter Card:

Card Column	Entry
1-2	···1··
4-5	r,
7-8	т. ^т .2
10-11	r _z
12-18	N (where N = the total number of data cards)
19-24	Set identification

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		7070 Program # <u>01760</u>
Data Cards		
Card Column	Entry	
2-3	k	
5-6	i	
8-9	, j	
10-19	X _{kii}	
20-80	blank	

Data is read one value of X_{kij} per card. If no decimal point is punched, X_{kij} will be read as an integer. The data cards may be in any order.

To help clarify the preceding remarks, let us consider an example showing the following data requirements.

- (1) The set identification is 10.
- (2) The user designates that $r_1 = 6$, $r_2 = 3$, and $r_3 = 3$, indicating that altogether there are 54 observations; hence 54 data cards.

In order to exemplify the coding of the data cards, we include below twelve observations from the fifty-four in the set.

The data cards are stacked as follows:

 $X_{111} = 45$, $X_{211} = 38$, $X_{311} = 39$, $X_{411} = 43$, $X_{511} = 40$, $X_{611} = 40$, $X_{112} = 38$, $X_{212} = 33$, $X_{312} = 32$, $X_{412} = 37$, $X_{512} = 36$, $X_{612} = 35$, etc.

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7070 Program # 01760

On the following five pages are coding sheets for the 55 cards necessary for processing the data set with program 01760.

On the page after the coding sheets is the output as generated from the same set of input data.

[DATA SETS MAY BE STACKED]

<u>Error Message</u>: If the data cards are out of order or missing, or if there is an error on the parameter card, the machine will write out an error message and go to the next data set. If the "-1" is missing from the parameter card, no message will be printed out, but the program will go to the next data set.

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NAME:______ SEX:_____ CASE NUMBER:_____

RECOMMENDATION:

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Orientation		Arithmetic	
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Vocabulary	Reading Comprehension	Spelling	lapitalization	Punctuation	Usage	TOTAL TEST L	Map Reading	Reading Grephs and Tables	Knowledge and Ise of Reference Materials	OTAL TEST W	Arithmetic Concepts	Arithmetic Problem Solving	TOTAL TEST A	, R, L, W, A

APPENDIX B

DATA SHEET FOR PILOT STUDY

Name	Case Number
Number of parents in home	
Parental occupation(s)	·
Parental stability:	
Alcoholism	
Desertion	
Drug dependency	
History of mental illness	
Number of sitlings	Ordinal position
Term of pregrancy	
Serious illness or accidents	-
	· · · · · · · · · · · · · · · · · · ·
Clinical history of family	
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Appendix C

COMPARATIVE DLA AND WISC SCORES FOR CERTIFIED AND NON-CERTIFIED GROUPS



APPENDIX D

POST-DRAWING INQUIRY FOR THE HOUSE-TREE-PERSON TEST

By John N. Buck

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P1.	Is that a man or woman or boy or girl?
P2.	How old is he?
РЗ.	Who is he?
P4.	Is he a relation, or friend, or what?
P5.	Whom were you thinking about while drawing?
P6.	What is he doing and where?
P7.	What is he thinking about?
P8.	How does he feel?
T1.	What king of tree is that?
т2.	Where is that tree standing?
т3.	About how old is it?
τ4.	Is that tree alive?
т5.	Which does that tree look more like to you; a man or woman?
т6.	What about the tree gives you that impression?
	·
т7.	Which way is it facing?
т8.	Is it by itself or with a group of trees?
т9.	Is the tree above, below, or even with you?
T10.	What is the weather like in this picture?
T11.	Is there any wind blowing in it?
P9.	What does this person make you think of?

	What does he remind you of?
	Is he well? Impression?
	Is he happy? Impression?
	Do you feel that way about most people? Why?
	What is the weather in this picture?
	Whom does he remind you of? Why?
	What does he need most? Why?
	Whom does that tree remind you of? Why?
•	What does it need most? Why?
	Whom does that house make you think of?
	Why?
	What does it need most? Why?
	To what does the chimney lead?
	To what does the walk way lead?
	If this were a person near the house, who might it be?
•	What kind of clothing does this person have on?
•	If you drew a sun in it where would it be?
,	Is it in the north, east, south, or vest?
	How many stories does that house have?
	Is it frame, brick, or what?
	Is that your own house?
	Whose house were you thinking about while drawing?

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Н5.	Would you like to own that house? Why?							
н6.	Which room would you take? Why?							
H7.	Whom would you like to have live there with you?							
	Why?							
H8.	As you look at that house, is it close or far away?							
н9.	Is the house above, below, or even with you?							
H10.	What does the house make you think of?							
H11.	What does it remind you of?							
н12.	Is it a happy, friendly house?							
н13.	What gives you that impression?							
H14.	Do you feel this way about most houses? Why?							
	······································							
н15.	What is the weather in this picture?							
T17.	What does that tree make you think of?							
T18.	What does it remind you of?							
T19.	Is it a healthy tree? What gives you that impression?							
	•							
T20.	Is it a strong tree? Impression?							
T21.	If this were a person near the tree who would it be?							

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APPENDIX E

MODIFIED RORSCHACH TEST

By Thomas K. Nelder

The following directions are read to the child as he is handed Card IV of the Rorschach Psychodiagnostic Test:

In this test you will be shown a card. You will then be asked to mark the answer that the card looks like <u>MOST</u> to you from the answers given below. You may turn the card any way you like but be sure to mark only one answer. Any answer is as good as any other answer, there is no right answer and no wrong answer. Be sure to mark an answer for both cards.

CARD IV

- It looks like a gorilla jumping down on you from a tree limb.
- 2. _____ It looks like a big, furry bearskin rug.
- 3. _____ It looks like a bat.
- 4. _____ It looks like a giant with big boots on, like you were looking up at him.

5. _____ It looks like a trained dog, sitting up.

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The following directions are read to the child as he is handed Card VII of the Rorschach Psychodiagnostic Test:

Be sure to mark one answer from the answers given below for this card also. Do not mark more than one answer. Mark the answer that the card looks like MOST to you.

CARD VII

- It looks like two women, chatting, with fur hats or pony tails.
- 2. It looks like a pile of ice or dirty snow melting.
- 3. _____ It looks like a map of some country.
- 4. _____ If you look at it upside down, it looks like a fur collar.

5. ____ It looks like a couple of gray clouds.

APPENDIX F

RESULTS OF SIX CHI-SQUARE TESTS ON REANALYZED PDI VARIABLES

		<u>Variable</u>	Responses	Certified <u>Group</u>	Non-Certified <u>Group</u>	<u>x²</u>	<u>p</u>	
I.	<u>Self</u> -	Concept						
	T18.	"What does the tree remind you of?"	Any responses No response	13 22	11 2	4.06	.05	
	T19.	"Is it a healthy tree?"	Yes No	22 13	13 0	2.21	.05	
	т20.	"Is it a strong tree?"	Yes No	24 11	13 0	1.92	.05	
	P15.	"What is the weather like in this picture?"	Moderate Extreme	14 21	10 3	1.95	.05	118
II.	Familial Relations							
	н6.	"Which room would you take?"	Accessible Inaccessible	0 35	4 9	2,86	.05	
	H10.	"What does the house make you think of?"	Any response No response	10 25	13 0	4.06	.05	

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